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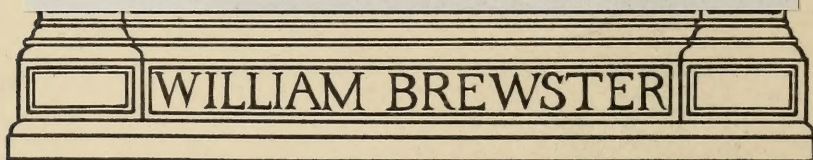
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THE  
HUMMING BIRD.

A QUARTERLY

SCIENTIFIC, ARTISTIC, and INDUSTRIAL REVIEW.

EDITED BY

A. BOUCARD.

VOLUME IV.

London, 1894.

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# NEW GENERA AND SPECIES OF BIRDS AND SHELL.

*Described in Volume IV. of the Humming Bird.*

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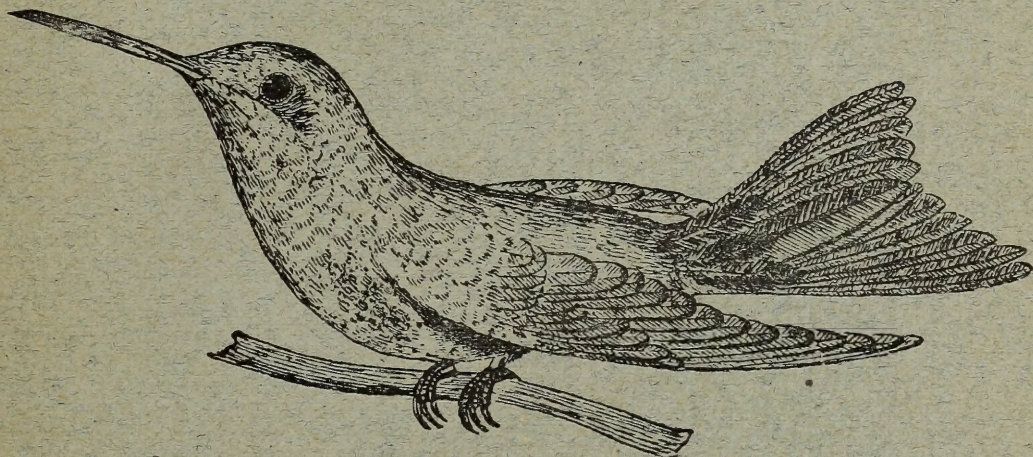
# The Humming Bird

~ A QUARTERLY ~

SCIENTIFIC, ARTISTIC AND INDUSTRIAL REVIEW

EDITED BY

A. BOUCARD.



*Arinia Boucardi*

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The same, Vol. II. London, 1892

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GENERA OF HUMMING BIRDS, by A. BOUCARD, pages 1 to 56.

SAUVETAGE DU PANAMA, 4ème edition, Brochure in 8vo., 32 pages. Tours, 1892.	6d.
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# The Humming Bird.

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## WONDERFUL DISCOVERY IN COLORADO (MEXICO.)

**R**UINS of most colossal dimensions have been lately discovered in the plains of Colorado (Mexico). By what remains, it is easy to make out that a very large city existed there, some hundred, or perhaps thousand years ago. Some wide avenues of MOLONITHS, as large, and as high as the gigantic columns of the celebrated THEBES, of one hundred gates; some remains of pyramids, whose steps are 80 yards wide, and of corresponding length, are still to be seen. Of what a fabulous size must have been the temples or palaces to which these steps conducted can hardly be imagined. Detailed news of this wonderful discovery are expected with eagerness by all Americanists, and meanwhile, I shall suggest that these magnificent ruins are probably the remains of the wonderful city of TULLAN or TULLA, founded by the great QUETZACOATL, whom the Mexicans adored as a God after his death. All the ancient Mexican manuscripts and Spanish works published during the last four centuries mention this great City, from which Quetzacoatl started for the South; but either from not understanding fully the meaning of the Mexican hieroglyphs, or better say, language of their manuscripts, or because it is not mentioned at all in them, no one has ever been able to say with certainty, where was the site of the said *Tullan*, although many of them agree that it was somewhere in Colorado.

I hope that the Mexican Government will take immediate steps for the exploration of these ruins, by sending on the spot, at once, a scientific Commission, well supplied with money, and all the necessary requisites. If that exploration is done properly and scientifically, I am certain that the archæological treasures, and others existing there, will repay a hundred fold the money spent, and who knows, perhaps may be found



there the key of the Mexican hieroglyphs, illustrating their manuscripts? This is a matter of great importance not only to Mexico, but to all America, because there are some probabilities that TULLAN can be considered as the place from which the old civilizations of the ASTECS, and INCAS spread from.

A.B.

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## RECENT SCIENTIFIC AND OTHER PUBLICATIONS.

WITH NOTES BY THE EDITOR.

1891.—ANNUAL REPORT OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION, Washington. One large Volume, 765 pages and Index, with a great number of illustrations. Its contents are:—VARIOUS REPORTS OF THE DEPARTMENTS OF THE NATIONAL MUSEUM, among which the HUMMING BIRDS, by Robert Ridgway. This part is excessively good, and most interesting. It treats extensively of the early history of these charming birds, their origin, names, geographical distribution, migrations, habits, abundance of individuals, actions and attitudes, manner of flight, disposition, intelligence, nests and eggs, all beautifully illustrated with good woodcuts, figuring the most striking structures, food, characters, and relationships, also woodcuts showing the skeleton of *Trochilus colubris*, and the dorsal and ventral aspects of the *pterylosis*, the shoulder girdle, of *Selasphorus platycercus*, the head of *Eulampis holosericeus*, and the details of structure of the tongue of these birds. Then follows two very interesting, and well-made black plates, figuring the largest species, *Patagona gigas*, and the smallest, *Mellisuga minima*, after which, are figured a good series of the variations of the bill, the wing, and tail, ornaments of the head, the legpuff of *Panoplitres flavescens*, and the short tarsal feathers of *Heliodoxa jacula*. Nine beautiful black plates, chiefly copied from Gould, represent, life size, *Steganura underwoodi*, *Oxygogon guerini*, *Ramphomicron herrani*, *Cephallepis delalandei*, *Gouldia conversi*, and *popelairi*, *Lophornis helenae*, *adorabilis*, *reginae*, *regulus*, *delattrei*, *ornatus*, and *magnificus*, *Acestrura heliodori*, *Eriocnemis alinae* and *Microchera albocoronata*, ending



with full descriptions and remarks on all the species found in the United States, with beautiful life size black plates of nearly all the species.

The following species are mentioned as occurring in the States. *Eugenes fulgens*, *Coeligena clemenciae*, *Trochilus colubris*, *violajugulum*, and *alexandri*, *Calypte annae*, and *costae*, *Selasphorus rufus*, *alleni*, and *platycercus*, *Stellula calliope*, *Calothorax lucifer*, *Amazilia cerviniventris*, and *fuscicaudata*, *Basilinna xantusi*, and *Iache latirostris*, which ends the series of species found in the United States.

He concludes by saying that the following three species, *Lampornis nigricollis*, *Atthis heloisae*, and *Agyrtria tobaci*, which have been mentioned in several works as American birds, are not entitled to a place in that fauna, although he thinks that *Atthis heloisae* may be found in Southern Texas. I am exactly of the same opinion as Mr. Ridgway, whom I congratulate heartily for his excellent work.

Page 286, I read a passage copied from Wallace's TROPICAL NATURE, which says, in speaking of the *Ermit Humming-birds*:—

“But there are many such, as PHAETHORINS EREMITA, and some larger allied species which I have never seen at flowers.”

This is quite wrong! *Phaethornis adolphi*, and *P. longirostris*, two species of which I have collected a large number of specimens, were always shot by me, when feeding on flowers. *P. longirostris* was always seen feeding on flowers of CANNA and FOURCROYA, and *P. adolphi* was seen early in the morning, and before sun-set, feeding chiefly on flowers of CONVULVULUS.

The other memoirs contained in the Report are:—WHITE LINE ENGRAVING FOR RELIEF PRINTING, by S. R. Koehler; THE METHODS OF FIRE MAKING, by Walter Hough; THE ULU, OR WOMAN'S KNIFE OF THE ESKIMO, by Otis. T. Mason, with a profusion of wood-cuts; THE ANCIENT PIT-DWELLERS OF YEZO, by Romyn Hitchcock, with eight beautiful plates; THE AINOS OF YEZO, JAPAN, by the same author, with a large number of fine plates and wood-cuts; HANDBOOK FOR THE DEPARTMENT OF GEOLOGY, by George P. Merrill; THE CATLIN COLLECTION OF INDIAN PAINTINGS, by Washington Matthews, with many interesting

illustrations; The LOG OF THE SAVANNAH, by G. Elfreth Watkins; AUTHROPOLOGY AT THE PARIS EXPOSITION OF 1889, by Thomas Wilson, ending with the BIBLIOGRAPHY OF THE UNITED STATES NATIONAL MUSEUM and LIST OF ACCESSIONS

1893.—THE HAWKS AND OWLS OF THE UNITED STATES IN THEIR RELATION TO AGRICULTURE, by A. K. Fisher, U.S. Department of Agriculture, Washington. One Volume, containing 201 pages of text and 25 beautifully coloured plates. This is a most interesting and useful work, showing that the birds of prey are more useful to agriculture than otherwise. No less than 2690 stomachs have been examined by Mr. Fisher, and the contents are enumerated in the tables accompanying the species. Of these, 169 contained the remains of poultry and game birds, 463 of other birds, 397 of mammals, and 623 of insects. If the stomachs of the six species which feed largely upon game and poultry are eliminated, we have a total of 2212 stomachs. Of these 78, or  $3\frac{1}{2}$  per cent., contained the remains of poultry or game; 257, or 11 per cent., of other birds; 945, or  $41\frac{1}{2}$  per cent., of mice; 309, or 11 per cent., of other mammals; and 599, or 27 per cent., of insects.

With the help of this excellent book, the farmer will be able to know which birds he may call his friends or his foes. It is very desirable that similar publications should be made in Europe and elsewhere, not only on the *Birds of Prey*, but on all birds in general. I am certain that in doing so many new facts will be discovered, and show that many of the species of birds, which are considered now as injurious, will turn out to be some of the best auxiliaries to Agriculture.

During my expeditions in North, Central, and South America, I have examined several thousands of stomachs of birds, killed and skinned by me; but unfortunately, I have not made notes of their contents, excepting those of Humming-birds, which always consisted of minute insects and honey.

1893.—CATALOGUE OF BIRDS IN THE BRITISH MUSEUM, Vol. XXI., COLUMBAE, OR PIGEONS, by T. Salvadori. This Volume contains 676 pages of text, and 15 fine coloured plates illustrating the following species:—

SPHENOCERUS *formosae*, OSMOTRERON *griseicauda*, *wallacei*, *aromatica* and *axillaris*, PTILOPUS *eugeniae*, CARPOPHAGA *oenothorax*, COLUMBA *grisea*, *albipennis*,



TURUROENA *delegorguei* and *sharpei*, OXYPELIA *cyanopsis*, CHAMAEPELIA *buckleyi*, PHLEGOENAS *beccarii*, *granti*, *albicollis*, and *erythroptera*, LEPTOTILA *megalura*, OSCULATIA *purpurea*, and OTIDIPHAPS *insularis*.

Seven new generic names are proposed. They are:— NESOENAS, Type *N. mayeri*, OXYPELIA, Type *O. cyanopsis*, CALOPELIA, Type *C. puella*, HISTRIOPHAPS, Type *H. histrionica*, ZONOPHAPS, Type *Carp. forsteri* CRYPTOPHAPS, Type *Carp. poeciliorhoa*, HOMOPELIA, Type *Turtur picturatus*.

*Osmotreron wallacei*, from Celebes, *Phabotreron occipitalis* from Basilan. *Ptilopus smithsonianus* from Paumotu, *Columba crissalis* from Central America, *Turturaena sharpei* from Central Africa, *Macropygia goldiei*, from New Guinea, *Zenaida yucatanensis*, from Yucatan, *Turtur shelleyi* from Upper White Nile, *Geotrygon venezuelensis* from Merida, Venezuela, *Phlogaenas granti* from Guadalcanar, and *Phlogaenas albicollis* from Bow Island, are described as new, or have new names assigned to them.

This volume is as excellent as the preceding ones, and the descriptions are very good.

1893.—CATALOGUE OF BIRDS IN THE BRITISH MUSEUM, Vol. XXII., the **Game Birds** (Orders PTEROCLETES, GALLINAE, OPISTHOCOMI, and HEMIPODI, by W. R. Ogilvie Grant.

This Volume contains 562 pages of text, and eight beautifully coloured plates. The species figured are:—FRANCOLINUS, *streptophorus*, *albugularis*, *spilolaemus*, *uluensis*, *elgonensis*, *shelleyi*, and *adspersus*, PTERNISTES, *leucoscepus* and *infuscatus*.

Two new sub-orders are proposed for Gallinae as follows:—**Alectoropodes** for TETRAONIDAE, and PHASIANIDAE, and **Peristeropodes**, for MEGAPODIDAE, and CRACIDAE, and the new Order, **Hemipodi**, for TURNICIDAE.

The following generic names are proposed as new:— DACTYLORTYX, Type *Ortyx thoracicus*, RHYNCHORTYX, Type *Odontophorus spodiostethus*, and EULIPOA, Type *Megapodius wallacei*:—*Francolinus streptophorus*, from Central Africa; *uluensis*, from East Africa; *shelleyi*, from South Africa; *elgonensis*, from Mount Elgon; *griseostriatus*, from West Africa; *gedgii*, from Central East Africa; *sharpii*, from Abyssinia; *jacksoni*, from South Africa; ARBORICOLA



*sumatrana*, and *CALOPERDIX sumatrana*, both from Sumatra; *borneensis*, from Sarawak, are all fully re-described; *GENNAEUS davisoni*, from Yunnan; *oatesi*, from Arrakan Hills; *ORTYX atriceps*, from Putla, Mexico; *CRAX panamensis*, from Central America, and *grayi*, from South America, are described as new species, or have new names assigned to them.

I cannot see why the generic name of *Rheinardius ocellatus* has been written *Rheinhardtus*, which is wrong, the correct spelling of the gentleman to whom it has been dedicated being *Reinhard*, not *Reinhardt*.

I don't quite agree with Mr. Ogilvie Grant about the position assigned to the sub-order **Peristeropodes**, and the order **Hemipodi**. I consider this order as useless, because the family of **TURNICIDÆ** is more naturally placed after the genus **RHYNCHORTYX**, family **PHASIANIDÆ**. I am of opinion also that the family **Cracidæ** is not placed at its proper place. Otherwise this volume, as the preceding ones, will be of much use to the Scientists, and the Trustees of the British Museum can be justly proud that this most important publication will soon be concluded. In my opinion it is the most valuable Ornithological work published for many years, and it has given a new impetus for work, to all Ornithologists.

1892-1893. — PROCEEDINGS OF THE ZOOLOGICAL SOCIETY OF LONDON. Part IV. 1892. Parts I., II. and III. 1893.

PART IV., 1892, contains 168 pages of text, Appendix, Index, and List of Contributors, and 13 black and coloured plates, illustrating *new Reptiles from Nyassaland*, **LYGODACTYLUS ANGULARIS**, **CHAMÆLEON ISABELLINUS**, **RAMPHOLEON PLATYCEPS**, **RAMPHOLEON BRACHYURUS**, and **PSAMMOPHYLAX variabilis**; *Cetacean remains from the Caucasus*, *New Phytophagous Coleoptera from Madagascar*, *Three new species of Monkeys*:—**CERCOPITHECUS STAIRSI**, **SEMNOPITHECUS EVERETTI**, and **THOMASI**. *New Asiatic butterflies*. *New species of Earthworms*—**MOLINIGASTER**. *New species of Earthworms*—**BENHAMIA**, **ACANTHODRILUS**, **MICRODRILUS**, and **EUDRILOIDES**. *Structure of MYRINE GLUTINOSA*.

PART I., 1893, contains 236 pages of text, and 15 black and coloured plates; illustrating the structure of **HESPERIDÆ**,



*New Dipterous Insects, New Copepoda from Zanzibar, XENOPSARIS ALBINUCHA, a new species of Cotingidae, Miocene and recent Sciuridae, and Structure of MESOPLONDON.*

PART II., 1893, contains 200 pages of text, and 18 black and coloured plates, representing CERCOPITHECUS SCHMIDTI, and CERCOPITHECUS MELONEYI, a new species of monkey, from British Central Africa. *Lentungula algivorans*, a new genus and species of *Acari*, found in Cornwall. *New South American Heterocera. Brain of African Elephant. Genital glands of Allolobophora longa. Structure of SIPUNCULUS. ICHTHYOMYS STOLZMANNI*, a new genus and species of Rat, from Central Peru. NYCTINOMUS KALINOWSKII, and ARTIBEUS GLAUCUS, two new species of Rats, from Central Peru, and Chanchamayo, and *New Moths of the Family GEOMETRIDAE.*

PART III., 1893, contains 159 pages of text, and 19 black and coloured plates, representing:—CERCOPITHECUS BRAZZAE, Miln. Edw., from French Congo. CERVUS THORALDI, a new species from Thibet. *The dentition of the Macropodidae. New species of PLEUROTOMIDAE. Female Water-buck and Young. Syringes of Psittaci. Bird-bones from Grive St. Alban. DRACO MAXIMUS, and MICROLEPIS, RANA CAVITYMPANUM, LATOPALMATA, WHITEHEADI, and RHACOPHORUS OTILOPHUS*, six new species from Borneo. *Butterflies of the genus THYSONOTIS. Mesozoic Ganoid Fishes, and VIPORA URSINII, Bonaparte, from Austria.*

In this part, page 507, is a very interesting article on the *Anatomy of Parrots*, by Frank E. Beddard; and page 529, the description of a new parrot, CYANORAMPUS FORBESI, by the Hon. Walter de Rothschild.

1893.—ZOOLOGICAL RECORD, Vol. XXIX., London, 1892. Edited by Doctor Sharp. GENERAL SUBJECTS, by T. Arthur Thomson, 54 pages. MAMMALIA, by R. Lydeker, 55 pages. AVES, by R. Bowdler Sharpe, 63 pages. REPTILIA AND BATRACHIA, by G. A. Boulenger, 41 pages. PISCES, by G. A. Boulenger, 38 pages. TUNICATA, by Prof. W. A. Herdman, 7 pages. MOLLUSCA, by B. B. Woodward, 96 pages. Brachiopoda, by B. B. Woodward, 8 pages. BRYOZOA (POLYZOA), by B. B. Woodward, 5 pages. CRUSTACEA, by R. I. Pocock, 34 pages. ARACHNIDA, by R. I. Pocock, 39 pages. MYRIOPODA and Prototracheata, by R. I. Pocock, 7 pages. INSECTA, by D. Sharp, 332



pages. MANTICORA GRUTI, Boucard, and ORNITHOMYA GENICULATA, Bigot, described in the *Humming-bird*, 1892, pp. 45 and 49, have been omitted. ECHINODERMATA, by F. A. Bather, 22 pages. VERMES, by Florence Buchanan, 88 pages. COELENTERATA, by Sidney T. Hickson, 13 pages. SPONGIAE, by R. Hanitsch, 24 pages. PROTOZOA, by R. Hanitsch, 32 pages.

1893.—**The Ibis.** Sixth Series, Vol. V. edited by Philip Lutley Sclater. No. 17 contains:—*List of Birds collected by Mr. Alexander White in Nyassaland*; by Captain G. E. Shelley. MELANOBUCCO ZOMBAE, SMILORHIS WHYTII, TURDUS MILANJENSIS, XENOCICHLA FUSCICEPS, CALLENE ANOMALA, APALIS FLAVIGULARIS, BRADYPTERUS NYASSAE, POGONOCICHLA JOHNSTONI, PACHYPRORA DIMORPHA, HIRUNDO ASTIGMA, HYPHANTORNIS BERTRANDI, and HAPLOPELIA JOHNSTONI, are described as new species. Beautiful coloured plates are given of:—SMILORHIS WHYTII, HYPHANTORNIS BERTRANDI, and HAPLOPELIA JOHNSTONI. *On the Osteology, Pterylosis and Muscular Anatomy of the American Fin-foot* (HELIORNIS SURINAMENSIS) by Frank E. Beddard. *On the Extinct Giant Birds of Argentine*, by R. Lydekker. *Notes on the Birds of the Loo-Choo Islands*, by Henry Seebohm. *On five apparently new species of Birds from Hainau*, by F. W. Styan.

GRAMINICOLA STRIATA, PINAROCICHLA SCHMACKERI, CRYPTOLOPHA BICOLOR, CRYPSIRHINA NIGRA, and ARBORICOLA ARDENS, are described as new species. *On the Birds of Aden*, by Lieut. H. E. Barnes. Fourteen species, amongst the 63 mentioned in this first list, are undetermined. Probably some may be new.

*Comparative Notes on the Swifts and Humming-birds*, by R. W. Shufeldt. I am glad to see that Mr. Shufeldt is of my opinion about the Humming-birds, and that he has adopted my Order TROCHILI for these birds, and that he is also of my opinion about the Swifts, which have more affinities with the Swallows than with any other birds, although he proposes to create the new Order of CYPSELI for them. I say *Order*, instead of *Sub-Order*, as he proposes, because I do not recognise SUB anywhere. They are *Orders* *Families*, *Genera*, or *Species*, or they are nothing at all.

*To be Continued.*

# LIST OF HUMMING BIRDS—FOR SALE—at 225, High Holborn, London, W.C.

		s.			s.
1	Trochilus colubris, L.	4	70b	Cyanolesbia coelestis, Gould	10
2	— alexandri, Bourc.	20	70c	— mocoa, Del.	20
3	Calypte costae, Bourc.	40	70d	— boliviana, Gould	100
4	— annae, Less.	8	71	Thalurania glaucopis, Gm.	3
5	Selasphorus rufus, Sw.	5	72	— columbica, Bourc.	3
6	— scintilla, Gould	40	73	— fanniae, Bourc.	12
7	— platycercus, Sw.	5	74	— furcata, Gmel.	4
8	— flammula, Salv.	40	75	— refulgens, Gould	6
9	Atthis heloisae, Les. and Del.	20	76	— nigrofasciata, Gould	6
10	— ellioti, Ridgw.	20	77	Chlorolampis caniveti, Less.	10
11	Stellula calliope, Gould	20	78	— osberti, Gould	10
12	Calothorax lucifer, Sw.	6	79	Chlorostilbon pucherani, Bou.	5
13	Acestrura mulsanti, Bour.	4	80	— splendidus, Vieill.	40
14	— heliodori, Bour.	2	81	— chrysogaster, Bourc.	10
15	— decorata, Gould	10	82	— angustipennis, Gray	3
16	Chaetocercus rosae, Bour.	20	83	— melanorhynchus, Gould	5
17	Tilmatura duponti, Less.	16	84	— assimilis, Lawr.	5
18	Myrtis fanny, Less.	10	85	— atala, Less.	10
19	Rhodopis vesper, Less.	30	86	Prasitis prasina, Less.	10
20	Thaumastura cora, Less.	20	87	— daphne, Bou.	10
21	Heliactin cornuta, Max.	25	88	Panychlora aliciae, Bourc.	10
22	Doricha enicura, Vieil.	6	89	— euchloris, Reich.	5
22a	— bryanthae, Lawr.	16	90	— poortmani, Bour.	2
23	Calliphlox amethystina, Gm.	5	91	— stenura, Cab.	10
24	— roraimae, Boucard	20	92	Basilinna leucotis, Vieill.	8
25	Lophornis ornatus, Bodd.	5	93	Eucephala grayi, Del.	5
26	— magnificus, Vieill.	10	94	Chlorestes coerulea, Vieil.	3
27	— helenae, Del.	10	95	Chrysuronia aenone, Less.	3
28	— pavoninus, Salv.	50	96	— longirostris, Berl.	4
29	— stictolophus, Salv.	20	97	— neera, Less.	20
30	— delattrei, Less.	10	98	— eliciae, Bourc.	6
31	Gouldia langsdorffi, Bou.	20	99	Hylocharis sapphirina, Gm.	4
32	— melanosternum, Gould	20	100	— cyanea, Vieill.	4
33	— popelairei, Dubus	16	101	— brasiliensis, Boucard	20
34	— conversi, Bourc.	5	102	— viridiventris, Berl.	10
35	Discura longicauda, Rei.	15	103	Cyanophaea caeruleigularis, Gould	16
36	Cephalolepis delalandei, Vieil.	5	104	— goudoti, Bourc.	2
37	Klais Guimeti, Bourc.	8	105	Polyerata amabilis, Gould	5
38	Bellona cristata, L.	8	106	Damophila typica, Bou.	3
39	— superba, Boucard	10	107	Agrytria leucogaster, Gm.	8
40	— exilis, Gm.	8	108	— tephrocephala, Vieil.	5
41	— emigrans, Lawr.	20	109	— tobaci, Gmel.	4
42	Abeillia typica, Bou.	6	110	— nigricauda, Elliott	10
43	Chrysolampis moschitus, L.	3	111	— fluvialis, Gould	16
44	Eustephanus galeritus, Mol.	5	112	Uranomitra francae, Bour.	2
45	— fernandensis, King	30	113	— viridiceps, Gould	10
46	Patagona gigas, Vieil.	10	114	— columbiana, Boucard	10
47	Oxygogon guerini, Boiss.	4	115	— milleri, Bourc.	5
48	— cyanolaemus, Salv.	40	116	— whitelyi, Boucard	10
49	— lindeni, Parz.	20	117	— niveipectus, Cab.	4
50	Eupogonius herrani, Del.	10	118	— candida, Bourc.	4
51	Lampropogon ruficeps, Bou.	50	119	— brevirostris, Less.	4
52	Chalcostigma heteropogon, B.	3	120	Leucochloris albicollis, Rei.	5
53	— stanleyi, Bourc.	10	121	Polytmus thaumantias, L.	4
54	Metallura thyrianthina, L.	2	122	— viridissimus, Vieil.	5
55	— quitensis, Gould	4	123	Aithurus polytmus, L.	8
56	— aeneicauda, Gould	40	124	Eupherusa eximia, Del.	3
57	Avocettimus eurypterus, L.	10	125	— egregia, Selat.	15
58	Adelomyia melanogenys, F.	2	126	Callipharus nigriventris, Lawr.	30
59	— inornata, Gould	30	127	Elvira chionura, Gould	10
60	Urosticte benjamini, Bour.	12	128	Hemistephania ludoviciae, Bourc.	4
61	Augastes superbus, Vieil.	40	129	— johannae, Bourc.	16
62	— lumachellus, Less.	40	130	Schistes geoffroyi, Bourc.	8
63	Ramphomicron microhynchum, Boiss.	3	131	Heliothrix auritus, Gmel.	5
64	Sappho sparganura, Sh.	50	132	— auriculatus, Eicht.	5
65	— phaon, Gould	40	133	— barroti, Bourc.	20
66	Lesbia nuna, Less.	30	134	Petasophora serrirostris, Vieil.	3
67	— gouldi, Lodd.	4	135	— cyanotis, Bourc.	3
68	— gracilis, Gould	6	136	— cabanisi, Lawr.	5
69	— victoriae, Bour.	5	137	— thalassina, Sw.	6
70	— aequatorialis, Boucard	6	136	— anais, Less.	2
70a	Cyanolesbia gorgo, Reich.	6	139	— delphinae, Less.	4



# LIST OF HUMMING BIRDS—FOR SALE—at 225, High Holborn, London, W.C.

140	<i>Eulampis jugularis</i> , L.	..	..	5	211	<i>Heliangelus strophianus</i> , Gould	..	10
141	<i>Sericotes holosericeus</i> , L.	..	..	4	212	— <i>spencei</i> , Bourc.	..	50
142	— <i>chlorolaemus</i> , Gould	..	..	20	213	<i>Heliotrypha exortis</i> , Fras.	..	3
143	<i>Lampornis mango</i> , L.	..	..	10	214	— <i>simoni</i> , Boucard	..	100
144	— <i>dominicus</i> , L.	..	..	20	215	— <i>viola</i> , Gould	..	25
145	— <i>gramineus</i> , Gmel.	..	..	4	216	<i>Erebenna derbiana</i> , Del.	..	30
146	— <i>nigricollis</i> , Vieil.	..	..	2	217	<i>Engyete alinae</i> , Bourc.	..	4
147	— <i>prevosti</i> , Less.	..	..	10	218	<i>Steganura underwoodi</i> , Less.	..	3
148	— <i>veraguensis</i> , Gould	..	..	10	219	— <i>melanathera</i> , Jard.	..	8
149	<i>Hypuroptila buffoni</i> , Less.	..	..	2	220	<i>Threptia aureliae</i> , Bourc.	..	3
150	— <i>caeruleiventris</i> , Reich.	..	..	5	221	— <i>russata</i> , Gould	..	10
151	— <i>isaurae</i> , Gould	..	..	30	222	— <i>assimilis</i> , Elliot	..	20
152	<i>Glaucis hirsuta</i> , Gmel.	..	..	3	223	<i>Panoplitus flavescens</i> , Lod.	..	4
153	— <i>mazeppa</i> , Less.	..	..	4	224	— <i>matthewsi</i> , Bour.	..	16
154	— <i>aenea</i> , Lawr.	..	..	4	225	— <i>jardinei</i> , Bourc.	..	20
155	<i>Ramphodon naevius</i> , Dum.	..	..	16	226	<i>Eriocnemis vestita</i> , Long.	..	3
156	<i>Anisoterus pretrei</i> , Less.	..	..	5	227	— <i>nigrivestis</i> , Bourc.	..	30
157	— <i>augusti</i> , Bourc.	..	..	10	228	— <i>cupreiventris</i> , Fras.	..	3
158	<i>Milornis squalidus</i> , T.	..	..	5	229	— <i>luciani</i> , Bourc.	..	5
159	— <i>rupununii</i> , Boucard	..	..	50	230	— <i>mosquerae</i> , Bourc.	..	40
160	— <i>longuemarei</i> , Less.	..	..	10	231	<i>Amazilia amazili</i> , Less.	..	20
161	<i>Eremita pygmaea</i> , Spix	..	..	4	232	— <i>cinnamomea</i> , Less.	..	15
162	— <i>griseigularis</i> , Gould	..	..	4	233	— <i>fuscicaudata</i> , Fras.	..	3
163	— <i>adolphi</i> , Gould	..	..	5	234	— <i>viridigaster</i> , Bourc.	..	8
164	— <i>strigularis</i> , Gould	..	..	5	235	— <i>edwardi</i> , Del.	..	20
165	<i>Phaethornis superciliosus</i> , L.	..	..	10	236	— <i>niveiventris</i> , Gould	..	20
166	— <i>eurynome</i> , Less.	..	..	5	237	— <i>cupreicauda</i> , Salv.	..	16
167	— <i>longirostris</i> , Less.	..	..	4	238	— <i>beryllina</i> , Licht.	..	8
168	— <i>panamensis</i> , Boucard	..	..	12	239	— <i>mariae</i> , Bourc.	..	4
169	— <i>consobrinus</i> , Bourc.	..	..	8	240	<i>Saucerottia erythronota</i> , Less.	..	4
170	— <i>guianensis</i> , Boucard	..	..	10	241	— <i>feliciae</i> , Less.	..	10
171	— <i>syrmatophorus</i> , Gould	..	..	16	242	— <i>wellsi</i> , Boucard	..	25
172	— <i>antophilus</i> , Bourc.	..	..	3	243	— <i>hoffmanni</i> , Cab.	..	20
173	— <i>hispidus</i> , Gould	..	..	5	244	— <i>sophiae</i> , Bourc.	..	15
174	<i>Ametrornis bourcierii</i> , Reich.	..	..	16	245	— <i>saucerottei</i> , Del.	..	5
175	<i>Toxateuches guyi</i> , Cab.	..	..	4	246	— <i>cyanifrons</i> , Bourc.	..	3
176	— <i>emiliae</i> , Bourc.	..	..	8	247	<i>Topaza pella</i> , L.	..	20
177	<i>Eutoxeres aquila</i> , Bourc.	..	..	10	248	— <i>pyra</i> , Gould	..	250
178	— <i>condaminei</i> , Bourc.	..	..	40	249	<i>Margarochrysis aurescens</i> , Gould	..	20
179	<i>Threnetes cervinicauda</i> , Gould	..	..	10	250	<i>Clytolaema rubinea</i> , Gmel.	..	4
180	— <i>ruckeri</i> , Bourc.	..	..	12	251	— <i>rubinoides</i> , Bourc.	..	3
181	<i>Aphantochroa cirrochloris</i> , V.	..	..	5	252	— <i>aequatorialis</i> , Gould	..	8
182	<i>Campylopterus cuvieri</i> , Del.	..	..	12	253	<i>Lafresnaya flavicaudata</i> , Fras.	..	3
183	— <i>largipennis</i> , Bodd.	..	..	10	254	— <i>gayi</i> , Bourc.	..	10
184	— <i>obscurus</i> , Gould	..	..	10	255	<i>Aglaeactis cupripennis</i> , Bourc.	..	5
185	— <i>ensipennis</i> , Siv.	..	..	8	256	— <i>caumatonata</i> , Gould	..	30
186	— <i>hemileucurus</i> , Licht	..	..	5	257	— <i>pamela</i> , Dorb.	..	50
187	<i>Saepiopterus lazulus</i> , Vieil.	..	..	3	258	<i>Florisuga mellivora</i> , L.	..	3
188	— <i>phainopeplus</i> , Salv.	..	..	50	259	— <i>fusca</i> , Vieil.	..	5
189	— <i>rufus</i> , Less.	..	..	25	260	<i>Oreotrochilus leucopleurus</i> , Gould	..	10
190	— <i>hyperythrus</i> , Cab.	..	..	50	261	— <i>chimborazo</i> , Del.	..	8
191	<i>Sphenoproctus pampa</i> , Less.	..	..	8	262	— <i>pichincha</i> , Bourc.	..	6
192	<i>Eupetomena macroura</i> , Gmel.	..	..	4	263	<i>Floricola longirostris</i> , V.	..	4
193	<i>Hylonympha macrocerca</i> , Gould	..	..	40	264	— <i>pallidiceps</i> , Gould	..	5
194	<i>Leadbeatera grata</i> , Bou.	..	..	4	265	— <i>constanti</i> , Del.	..	30
194a	<i>Xanthogenyx salvini</i> , d'Ham	..	..	60	266	<i>Lepidolarynx mesoleucus</i> , T.	..	5
195	<i>Heliodoxa jacula</i> , Gould	..	..	10	267	<i>Diphlogaena hesperus</i> , Gould	..	60
196	— <i>jamesoni</i> , Bourc.	..	..	16	268	<i>Helianthea eos</i> , Gould	..	40
197	— <i>henrici</i> , Lawr.	..	..	20	269	— <i>bonapartei</i> , Boiss.	..	5
198	<i>Iolaema schreibersi</i> , Bour.	..	..	20	270	— <i>typica</i> , Gould	..	4
199	<i>Sternoclyta cyanipectus</i> , Gould	..	..	40	271	<i>Homophania torquata</i> , Boiss.	..	3
200	<i>Eugenes fulgens</i> , Sw.	..	..	5	272	— <i>fulgidigula</i> , Gould	..	6
201	<i>Docimastes ensiferus</i> , Boiss.	..	..	6	273	— <i>conradi</i> , Bourc.	..	25
202	<i>Caeligena clemenciae</i> , Less.	..	..	8	274	<i>Bourcieria prunellii</i> , Bourc.	..	5
203	<i>Lamprolaema rhani</i> , Less.	..	..	6	275	— <i>wilsoni</i> , Del.	..	10
204	<i>Oreopyra leucaspis</i> , Gould	..	..	20	276	<i>Lampropygia coeligena</i> , Less.	..	10
205	— <i>calolaema</i> , Salv.	..	..	20	277	— <i>columbiana</i> , Elliot	..	8
206	— <i>pectoralis</i> , Salv.	..	..	30	278	<i>Calligenia lutetiae</i> , Del.	..	10
207	<i>Delattria henrici</i> , Less.	..	..	12	279	<i>Pterophanes temminckii</i> , Boiss.	..	11
208	— <i>viridipallens</i> , Bourc.	..	..	5				
209	<i>Panterpe insignis</i> , Cab.	..	..	40				
210	<i>Heliangelus clarissae</i> , Long.	..	..	3				

This List cancels all previous ones.

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[PRICE 2/6.

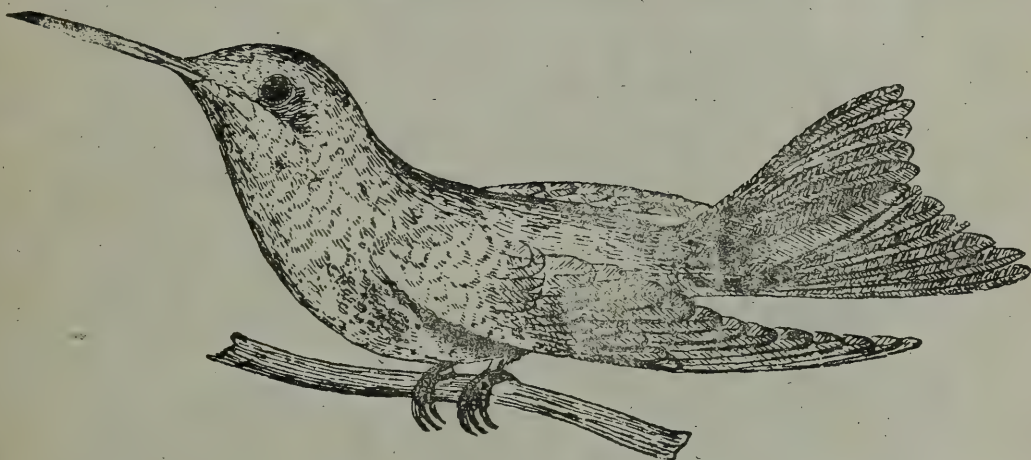
# The Humming Bird

~ A QUARTERLY ~

SCIENTIFIC, ARTISTIC AND INDUSTRIAL REVIEW

EDITED BY

A. BOUCARD.



*Arinia Boucardi*

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**— Second International Ornithological Congress —**

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The same, Vol. II. London, 1892	10/-
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Description of a supposed new Species of Humming Birds, in Boucard's Museum—The World's Fair, International Exposition of Chicago—Review of New Scientific Books—Notes on the Rare Pheasant, <i>Rheinardius ocellatus</i> —Books received—Celebrated Gallery of Old Masters, of the late General Marquess de Garbarino—Customs Tariff of Great Britain and Ireland—Obituary—Biographical Notes on Henry Walter Bates, F.R.S., etc. (with portrait)—American Pearls—Fish from Volcanoes—A very large Tree—A Curious Rat Catcher—List of Birds collected, by Mr. Hardy at Porto-Real, Brazil, with description of one supposed New Species—Description of a supposed New Species of the genus <i>Manticora</i> , " <i>Cicindelida</i> ," from Damara Land, South Africa—Description d'une espèce nouvelle de Diptère parasite de Costa Rica, <i>Ornithomyia geniculata</i> —The Completion of the Panama Canal—A complete list, up to date, of the Humming Birds found in Columbia, with descriptions of several supposed New Species—Christopher Columbus—Festivities and Exhibitions, held in honour of Christopher Columbus in America, Spain, Italy and France—America—Le Canal de Panama—International Exhibition in Monaco—A new Emission of Postage Stamps.	
REVIEW OF NEW PUBLICATIONS, comprising:—Annual Report of the Board of Regents of the Smithsonian Institution, 1890-1891—Catalogue of Birds in the British Museum, Vol. XX., 1891, Vol. XVI., 1892, Vol. XXII., 1892—Zoological Record, Vol. XXVIII., 1892—Proceedings of the Zoological Society of London, 1892—The Ibis, Vol. IV., Sixth Series, 1892—Mémoires de la Société Zoologique de France, Vol. V., 1892—Memorias y Revista de la Sociedad científica, Antonio Alzate, 1892—Actas de la Société scientifique du Chili, Vol. I., 1892—The Entomologist's Monthly Magazine, 1892, etc.	
OBITUARY:—August von Reizen—Dom Pedro d'Alcantara—M. Alphand—Monseigneur Freppel—Armand de Quatrefores de Breau—Duke of Clarence—Henry Walter Bates—Etienne Arago—Hermann Charles Burmeister—Carl August Dohrn—Marshal da Fonseca—Ernest Renan—Alfred Tennyson—Xavier Marmier.	
GENERA OF HUMMING BIRDS, by A. BOUCARD, pages 1 to 56.	
SAUVETAGE DU PANAMA, 46me edition, Brochure in 8vo., 32 pages. Tours, 1892.	6d.
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Continued from page 8.

He mentions 61 important structural differences existing between CYPSELI and TROCHILI. To these structural differences he could have added many other differences in their external appearances and habits.

I think it is quite wrong to rely on anatomy only, as it is usually done now by the majority of authors of systematic classification. I am of opinion that the external characters have as much importance as the internal ones.

*Notes on Collecting in Koua, Hawai*, by A. C. L. Perkins. *Descriptions of three new Birds from the Sandwich Islands*, by the Hon. Walter de Rothschild. HEMIGNATHUS AFFINIS, LOXOPS OCHRACEA, and PALMERIA MIRABILIS, a new genus of the family MELIPHAGIDAE, are described as new species.

NO. 18 contains:—*On the Birds of Aden*, by Lieut. H. E. Barnes. In this second and last part, sixty-three species are recorded, six of which are undetermined. On the Occurrence of the Sharp-tailed Sandpiper (*Tringa acuminata*) in Norfolk, by Henry Seebohm. A beautiful coloured plate of this species is given. *List of Birds observed in the Canary Islands*, by E. C. Meade-Waldo. Many native names are given. *On a remarkable new Finch from the Island of Bolivia*, by Hans. Graf von Berlepsch. The generic name of COMPROSPIZA is proposed for this new form of Fringillidae, on which Mr. Berlepsch has bestowed the name of GARLEPPI, the discoverer of this fine bird. A beautiful coloured plate accompanies the description. *Remarks on the Birds of the Gilbert Islands*, by L. W. Winglesworth. *On the Bird indicated by the Greek, Αλκνιοι*, by H. B. Tristram. *On the Species of ZOSTEROPS found in the Island of Java*, by Henry Seebohm. *On the Species of MERULA found in the Island of Java*, by Henry Seebohm. *Notes on Birds observed during a Collecting Expedition to Eastern Africa*, by Frank Finn. Forty-eight species are mentioned. *On some Genera of Oriental Barbets*, by W. T. Blandford. *On ACREDULA CAUDATA, and its allied forms*, by H. E. Dresser. *Notes on PARAMYTHIA MONTIUM and AMALOCICHLA SCLATERIANA*, by Dr. Philip Lutley Sclater. Mr. Sclater is of opinion that this remarkable bird must come into the Fringilliform OSCINES, but does not fit well with any of the groups of this section, and proposes for it the new family name of PARAMYTHIIDAE, coming perhaps nearest to the Ampelidae and some of the Dicaeidae. As to AMALOCICHLA SCLATERIANA, he thinks



that this form rather belongs to the Turdidae than to the Timeliidae, as suggested by Mr. de Vis. These two birds are from British New Guinea. A fine coloured plate of *PARAMYTHIA MONTIUM* is given. *Note on the proper use of the Generic terms CERTHIOLA and CAEREBA*, by Dr. Philip Lutley Sclater.

NO. 19 contains:—*On the Birds of the Islands of Aruba, Curacao, and Bonaire*, by Ernst Hartert, 40 species are mentioned from Aruba, 39 from Curacao, and 38 from Bonaire. A beautiful coloured plate of *CHRYBOTIS OCHROPTERA*, and *CHRYBOTIS ROTSCHILDI* is given. *On the Collection of Raptorial Birds in the Norwich Museum*, by J. H. Gurney. *Notes on the Nestling of some Shetland Birds*, by Ernest W. H. Blagg. *On the Cause of Variation in the shape of the Eggs of Birds*, by Henry Seebohm. *On a point in the mechanism of the Bill in Birds*, by W. P. Pycraft. *Swifts and Humming Birds*, by Frederic A. Lucas. *On the Occurrence of White's Thrush in European Russia*, by Dr. M. Menzbier. *On the Nest and Eggs of GERYGONE MAGNIROSTRIS*, Gould, by Alfred J. North. *Notes on the Synonymy of some Palaearctic Birds*, by H. E. Dresser. *On the avifauna of Mount Duli, and the Baram district in the territory of Sarawak*, by Charles Hose. Two hundred and sixty-six species are enumerated, and beautiful coloured plates of *ORIOLOS HOSEI*, and *SCOPS BROOKII*, are given. *On the Birds of Hainan*, by F. W. Styan. One hundred and fifty nine species are mentioned. *CRYPTOPHA BICOLOR*, Styan, is the same as *HERPORNIS TYRANNULUS*, Swinhoe. *PINAROCICKLA SCHMACKERI*, Styan, is the same as *CRINIGER PALLIDUS*, Swinhoe. *CRYPHIRHINA NIGRA*, Styan, is *TEMNURUS NIGER*. A fine coloured plate of *Aborichola ardens* is given.

PART XX. contains:—*On the Egg of the Empress Augusta Victoria's Paradise Bird*, by Dr. A. B. Meyer. A coloured plate is given. *Field Notes on the Birds of Estancia, Sta Elena, Argentine Republic*, by A. H. Holland, with remarks by P. L. Sclater. Fifteen species are mentioned. *A Review of the Species of the family PITTIDAE*, by John Whitehead. Forty-eight of these fine birds are recognised as distinct species, and very interesting notes are given on many of them. *Notes on certain species of New Zealand Birds*, by W. W. Smith. *A list of the Birds inhabiting the Chatham Islands*, by H. O. Forbes. *PHALACROCORAX ONSLOWI*, and *PHALACROCORAX ROTSCHILDI*, are proposed for two new

species of Cormorants. Eggs of GALLINAGO PUSILLA, GARDODIA NEREIS, CABALUS MODESTUS, THINORNIS NOVOE-ZELANDIAE, and Young of GALLINAGO PUSILLA and THINORNIS NOVOE-ZELANDIAE are figured. *Bornean Notes*, by R. Bowdler Sharpe. They are divided as follows:— I.—*First List of Birds from Mount Kalulong, Sarawak.* II.—*A List of the Birds collected by Mr. A. H. Everett on Mount Penriseu and Mount Poeh, in Sarawak.* III.—*Description of a new Spilornis from Borneo.* SPILORNIS RAJA is the name proposed for it. IV.—*A Note on the BAZA of Borneo.* V.—*Notes on Mr. A. H. Everett's Collection of Birds from Northern Borneo and Sarawak.* VI.—*Additions to the Avifauna of Mount Kina Balu.* The name of ARACHNOPHARIS EVERETTI is proposed for a new species of Spiderhunter. VII.—*Description of the Nest and Eggs of STAPHIDIA EVERETTI.* *On the Mechanism of the upper mandible in the Scolopacidae*, by R. W. Shufeldt. *On the validity of CHRYSOTIS CANIFRONS*, by George Lawrence.

1894. THE IBIS, Vol. XI., No. 21, January 1894 contains:—*Second List of Birds collected by Mr. Alexander Whyte in Nyassaland*, by Captain G. E. Shelley, PROSTICUS ZAMBESIAE, XENOCICKLA MILANYENSIS, PHYLLOSTREPHUS CERVINIVENTRIS, ANDROPADUS ZOMBENSIS, SYLVELLA WHYTI, LANIARIUS BERTRANDI, HYPHANTORNIS NYASSAE, PYRENESTES MINOR, and FRANCOLINUS JOHNSTONI, are described as new species. XENOCICKLA MILANJENSIS, and FUSCICEPS, PHYLLOSTROPHUS CERVINIVENTRIS, and LANIARIUS BERTRANDI, are figured. *On some Birds from Bugotu, Solomon Islands, and Santa Cruz*, by H. B. Tristram, ZOSTEROPS METCALFII, and MACROCORAX VEGETUS, from Bugotu, and ZOSTEROPS SANCTAE-CRUCIS, from Santa Cruz are described as new species. ZOSTEROPS METCALFII, and RENDOVAE are figured. *On the Taxonomy of the Swifts and Humming-Birds*, by Dr. R. W. Shufeldt. This is a rejoinder to the paper entitled, *Swifts and Humming-Birds*, by F. A. Lucas, which appeared in Part 19 of the Ibis, Mr. Shufeldt maintains his opinion about the great differences existing between these birds. *On the Birds of the Calcutta District*, by Philip W. Munn, 152 species are mentioned, and English names are given for all of them. *Notes on some Tunisian Birds*, by T. T. S. Whitaker, 62 species are mentioned. *On the interbreeding of RHIPIDURA FULIGINOSA with R. FLABELLIFERA*, by T. C. McLean. *On the Chrysotis canifrons of Lawrence*, by Ernst Hartert. A



rejoinder to the paper entitled, *On the validity of* CHRYSOTIS CANIFRONS, by George Lawrence, Ibis, 1893, Part 20. *Ornithology at Munich, Stullgart, Darmstadt, Frankfort and Cassell*, by Philip Lutley Sclater. *Description of a new species of Grebe from Central Peru*, by Von Berlepsch and Jean Stolzmann. PODICEPS TACZANOWSKII, is the name proposed for it. A beautiful coloured illustration of the species is given.

1892-1893.—BULLETIN OF THE BRITISH ORNITHOLOGISTS' CLUB.—At the first meeting held on the 19th of October, 1892, Dr. Bowdler Sharpe proposed the following new names for several birds forwarded by Mr. Everett, from the Island of Mantanani, and by Mr. Charles Hose, from Mount Dulit, in Sarawak :—SCOPS MANTANANENSIS, SCOPS CROOKII, ORIOLUS ROSII, and BATRACHOSTOMUS MIXTUS.

Mr. Ogilvie Grant sent the description of a new Caloiperdix from Borneo, which he proposes to name CALOOPERDIX BORNEENSIS, and another species from Sumatra, which he calls CALOOPERDIX SUMATRANA.

Captain Shelley sent the descriptions of several new species from Africa as follows :—CYNNIRIS NESOPHILUS, ZOSTEROPS ANDERSSONI, PARUS XANTHOSTOMUS, and PARUS ROVUMAE.

Dr. Sharpe proposed the name of STACHYRIS DAVISONI for a new species, collected by Mr. Davison at Pahang.

At the second meeting, held on the 1st December 1892, Count Salvadori proposed the names of PHLOGAENAS BIMACULATA, for a new Pigeon from Macassar and PHLOGAENAS ALBICOLLIS, for another new species from Bow Island.

The Hon. Walter de Rothschild proposed the name of PTILOPUS SALVADORII, for a new Pigeon from the Island of Jobi.

Mr. Ernst Hartert proposed the names of MYARCHUS BREVIPENNIS, for a new Fly-catcher from the Islands of Aruba, Curacao and Bonaire, CHRYSOTIS ROTSCILDI for a new species of Parrot, from Bonaire, and STRIX BARGEI, for a new species of Owl from Curacao.

At the third meeting of the Club, held the 31st December, 1892, Mr. Dresser proposed the name of ACREDULA MACEDONICA, for a new species of that genus, from Monte Olympos.

Mr. Hartert proposed the name of *CONURUS ARURENSIS*, for a new Parrot from Aruba, West Indies.

The Hon. Walter de Rothschild proposed the name of *ANAS LAYSANENSIS*, for a new species of Duck from the Island of Laysan, North Pacific.

Dr. Bowdler Sharpe proposed the name of *RHIPIDURA BUETTIKOFEI*, for a new species of *Rhipidura* from the Island of Dammar in the Banda Sea.

At the fourth meeting of the British Ornithologists' Club, held on the 26th of January, 1893, The Hon. Walter de Rothschild proposed the name of *HEMIGNATHUS LANAIENSIS*, for a new species of *Hemignathus* from the Island of Lanai, Sandwich.

Mr. Henry Seebohm proposed the name of *MERULA WHITEHEADI*, for a new species obtained near Tozari in East Java, by Mr. Whitehead. He also proposed the name of *ZOSTEROPS NEGLECTA*, for a new species found in Java by Mr. Whitehead.

Dr. Bowdler Sharpe proposed new generic names for some species of *Rallidae*, as under :—

*TRICHOLIMNAS*, Type *T. lafresnayanus*, Verr.

*DRYOLIMNAS*, Type *D. cuvieri*, Pucher.

*CARTAHOLIMNAS*, Type *C. canningi*, Blyth.

*CRECOPSIS*, Type *C. egregia*, Peters.

*OENOLIMNAS*, Type *Æ. isabellinus*, Schl.

*AMAUROLIMNAS*, Type *A. concolor*, Gosse.

*ANUROLIMNAS*, Type *A. castaneiceps*, Scl and Salv.

*POLIOLYMNAS*, Type *P. cinereus*, V.

*MICROTRIBONYX*, Type *M. ventralis*, Gould.

At the fifth meeting of the Club, held the 1st of March, 1893, Mr. H. E. Dresser proposed on behalf of Mr. John Whitehead the name of *CRYPTOLOPHA XANTHOPYGIA*, for a new species from Palawan Islands.

Mr. Osbert Salvin proposed the names of *CYPHORINUS RICHARDSONI*, for a new species collected by Mr. Richardson in Nicaragua; and *RHOPOTERPE STICTOPTERA*, for a new species also discovered by Mr. Richardson in Nicaragua. He also proposed the name of *OESTRELATA AXILLARIS*, for a new species of Petrel from Chatham Islands.

At the sixth meeting of the Club, held on the 15th of March, 1893, the Hon. Walter de Rothschild proposed the name of *PSEUDONESTOR* for a new genus and a new species



of Fringilline bird, allied to PSITTACIROSTRA from Sandwich Islands, which he proposes to call PSEUDONESTOR XANTOPHRYS.

Dr. Bowdler Sharpe proposed the new generic names of HELIOPAIS, Type PODICA PERSONATA, Gray, for the Burmese Fin-Feet. He also proposed the names of LIMNOGERANUS, Type *Limnogeranus americanus*, L. SARCOGERANUS, Type *Sarcogeranus leucogeranus* Pall. PSEUDOGERANUS, Type *Pseudogeranus loucauchen*, T. for some new Genera of Cranes.

Mr. Hartert proposed the name of EUETHEIA SHARPEI, for a new Finch collected by him at Bonaire, Curaçao, and Aruba.

At the seventh meeting held on the 19th of April 1893, Mr. Ernst Hartert proposed the name of PISORHINA SOLOKENSIS, for a new Scops-Owl, from Sumatra.

The Hon. Walter de Rothschild proposed the name of RALLUS MUELLERI, for a new species of Rail from Auckland Island, south of New Zealand. He also proposed the names of ACRULOCERCUS BISHOPI, HIMATIONE NEWTONI, and HIMATIONE WILSONI, for three new birds from Sandwich Islands.

At the eighth meeting of the Club, held on the 17th of May, 1893, Canon Tristram proposed the name of GALLINAGO HUEGUELI for a new Snipe from Snares Islands.

The Hon. Walter de Rothschild proposed the name of DIOMEDEA IMMUTABILIS, for a new species of Albatross from Laysan Island, North Pacific.

Mr. Osbert Salvin proposed the names of METALLURA ATRIGULARIS and METALLURA BARONI for two new species of Humming-Birds from Ecuador, collected by Mr. O. T. Baron.

Dr. Bowdler Sharpe proposed the new generic names HETEROTIS, Type *Heterotis vigorsi*, Smith. NEOTIS, Type *Neotis ludwigi*, Rupp. HOUBAROPSIS, Type *Houbaropsis bengalensis*, Gm., for new genera of Otides.

At the ninth meeting of the Club, held on the 21st of June, 1893, Dr. Bowdler Sharpe proposed the generic name ARAMIDOPSIS for *Rallus plateni*, Blasius. He also proposed the names TURDINUS KALULONGAE, GLAUCIDIUM BORNEENSE and SPILORNIS RAJA for three new birds from Sarawak.

The Hon. Walter de Rothschild proposed the names LOXOPS WOLSTENHOLMEI, VIRIDONIA MACULATA, ANOUS

HAWAIIENSIS, OESTRELATA NIGRIPENNIS, THALASSOGERON SALVINI, and DIOMEDEA BULLERI, for six new species from the Island of Oahu, Hawai, Kermadec Island and New Zealand.

At the tenth meeting of the Club, held on the 18th of October, 1893, Mr. Jackson proposed the name DRYOSCAPUS PRINGLII, for a new species of Bush-Shrike, collected by him in Eastern Africa.

Mr. E. Hargitt proposed the name PICUMNUS SALVINI, for a new species allied to P. UNDULATA, from Giuana. No locality is given.

Dr. Bowdler Sharpe proposed the name ARDEIRALLUS PRAETERMISSUS for a new species from Ceram and Bourou.

At the eleventh meeting of the Club, held on the 15th of November, 1893, Mr. Osbert Salvin proposed the name ANTHOCEPHALA BERLEPSCHI, for a new species of Humming-Bird from Columbia.

The Hon. Walter de Rothschild stated that the bird described by him as PALMERIA MIRABILIS, is the same as HIMATIONE DOLEI, Wils., but as it is a genus very distinct of HIMATIONE, the name of this peculiar bird must stand henceforth as PALMERIA DOLEI, Wils.

Dr. Bowdler Sharpe proposed the names SCOPS SIBUTUENSIS, PRIONUTURUS VERTICALIS, DICAUEUM SIBUTUENSE, and EDOLISOMA EVERETTI, for four new birds from Sibutu and Bongao Islands.

1892.—MEMOIRES DE LA SOCIÉTÉ ZOOLOGIQUE DE FRANCE, *Tome V.*, 5 ème partie.

*Diptères nouveaux*, by T. M. Bigot, continued. *Rapport sur le Congrès Ornithologique international de Budapest*, by E. Oustalet. *Etudes sur la faune macalologique des Iles Sandwich*, by C. Felix Ancey. PUPA ACANTHINULA, LYONSIANA, and MAGDALENÆ, CAECILIANELLA BALDWINI, AMASTRA FROSTI, and CARELIA SINCLAIRI, are described as new species. *Etudes sur l'écrivain ou Gribouri* (ADOXUS VITIS) Kirby, by H. Jolicoeur and E. Topsent.—*Echinides nouveaux ou peu connus*, by G. Cotteau. CIDARIS FELICIAE, and REJAUDRYI, CAELOPLEURUS, ISABELLÆ, HEMIPNEUSTES ARNAUDI, STRICTECHINUS POUECHI, are described as new species. STRICTECHINUS is the name of a new genus, proposed by Mr. Cotteau for the last species.

1893.—MÉMOIRES DE LA SOCIÉTÉ ZOOLOGIQUE de France, *Tome VI.*



PART I. and II. contains:—*Etude zoologique et anatomique du TROGLYPHUS MALUS, et de sa nymphe hypopiale*, by J. Lignières. *Etude zoologique et anatomique de L'HEMISARCOPTES COCCISUGUS*, by the same author. *Les Oiseaux hybrides reucontrés à l'état sauvage*, par André Suchetet, fourth contribution. ACCIPITRES, *Voyage de Mr. Ch. Alluaud aux Iles Canaries*:—ISOPODES TERRESTRES, by Adrien Dolfus. ARMADILLO CANARIENSIS and AUSSELI, PORCELLIO OVALIS, CANARIENSIS, ALLUAUDI, and SPINIPES, and METOPONORTHUS STRICTICAUDA, are described as new species. *Monographie des MILIOLIDÉES, du golfe de Marseille*, by C. Schumberger. MASSILINA is proposed as a new genus for *M. secans*, d'Orb. SPIROLOCULINA INAEQUILATERALIS, SIGMOILINA COSTATA, TRILOCULINA MARIONI, QUINQUELOCULINA STELLIGERA, MASSILINA ANNECTENS, are described as new species. *Cinquième note sur les Nématodes libres de la Mer du Nord et de la Manche*, by Dr. T. G. de Man. THALASSOALAIMUS, TREFUSIA, SIPHONOLAIMUS, TRIODONTOLAIMUS, ENOPLOLAIMUS, are proposed for five new genera. THALASSOALAIMUS TARDUS, MONOHYSTERA LEPTOSOMA, TREFUSIA LONGICAUDA, ARÆCOLAIMUS MICROPHTHALMUS, SPILAPHORA PARVA, GRACILICAUDA and DOLICHURA, CHROMADORA POECILOSOMA, SIPHONOLAIMUS NIGER, ENOPLOLAIMUS VULGARIS, are described as new species. *Deuxième Rapport sur la Nomenclature des Etres organisés*, by Dr. Raphael Blanchard. *Contribution à l'histoire naturelle du Hanneton (MELOLONTHA VULGARIS)*, by Xavier Raspail. Seven black plates, illustrating some species of MILOLIDAE and NEMATODES, are given at the end of these parts.

PART III. contains:—*Voyages de la goëlette MELITA, sur les côtes orientales de l'Océan Atlantique et dans la Méditerranée*, CEPHALOPODES, by Dr. Louis Joubin. *Nouvelles Recherches sur l'existence de l'Epervier majeur*, ACCIPITER MAJOR, Degl. by Xavier Raspail. CANTHOCAMPTUS GRANDIDIERI, ALONA CAMBOUEI, *nouveaux ENTOMOSTRACÉS d'eau douce de Madagascar*, by Jules de Guerne and Jules Richard. *La Graphitose et la Septicémie chez les Insectes*, by I. Krasilshitschik. *Notes pour servir à la connaissance des Mutilles paléarctiques et Description de quelques espèces nouvelles*, by Ernest André. MUTILLA DALMATICA, INNESI, SEMIRUFA, PECTINIFERA and SCHULTHESSI are described as new species. *De la Nomenclature zoologique*, by Dr. Charles Girard.

1893.—BULLETIN DE LA SOCIÉTÉ ZOOLOGIQUE DE FRANCE.

PART I. contains :—*Courtes Notices sur les Hirudinées*, VII., VIII., IX., by Dr. Raphael Blanchard. *Sur quelques Oiseaux de l'Inde, du Tibet, et de la Chine*, by E. Oustalet. The names of *Lophophorus Mantoui*, and *obscurus* are proposed for two varieties of *L. impeyanus*. I am of opinion that the distinct coloration of these birds arises from natural or accidental causes, and that they cannot be considered as distinct species. (Edit.) *PALAEORNIS SALVADORII* is proposed for a new species of Parrot discovered by Mr. Armand David in Tibet. *Les Zoologistes actuels*, by L. H. Herrera. *Remarques sur quelques espèces du genre BULIMINUS, avec les descriptions de plusieurs espèces nouvelles de ce genre*, by C. F. Ancey. *BULIMINUS SEMENOVII*, *ANNENKOVII*, are described as new species. *Faunes malacologiques de l'Afghanistan et Bélouchistan*, by C. F. Ancey. *BULIMINUS SINDICUS*, *Bens*, var *OROBIA*, *KAYBERENSIS*, *COELOCENTRUM*, var *SUBOVATA* and *AUSTENIANA* are described. *Note Préliminaire sur une Planaire sp.*, by Xavier Raspail. *Note sur deux espèces nouvelles de Mammifères rapportées par Jean Dybowski de la région de l'Ourangui*, by E. de Pousargues. *GALAGO (HEMIGALAGO) ANOMURUS*, *CROSSARCUS DYBOWSKII* are proposed for these new species. *Sur une Collection de Poissons recueillie, par Mr. Chaper à Borneo*, by Léon Vaillant. Ninety-two species are mentioned. The name *DIASTATOMYCTER* is proposed for a new genus. Type *D. CHAPERI*, Vaill. *AMBLYRHYNCHICTRYS ALTUS*, *DIASTATOMYCTER CHAPERI*, and *CALlichrous EUGENEIATUS*, are described as new species.

PART II.—*Sur un crapaud pourvu d'un appendice caudal*, by Ernest Olivier. *Un Saurien nouveau et un Ophidien rare pour l'Algérie*, by Ernest Olivier. *QUATRIEME CAMPAGNE, DE L'HIRONDELLE, 1888, Sur les Crustacés amphipodes recueillis dans l'estomac des Germons*, by Edward Chevreux. *Observations d'anatomie comparée sur l'estomac des Caméliens*, by J. A. Cordier. *Contributions à la faune malacologique des Iles Sechelles*, by Ph. Dautzenberg. *Sur le mouvement de manège chez les Souris*, by Remy Saint-Loup. *Thermo-Regulateur*, by Charles Janet. *Notes Ornithologiques*, by Ch. van Kempen. *Courtes Notices sur les Hirudinées X., XI. and XII.*, by Dr. Raphael Blanchard. *PLACOBDELLA* is proposed for a new genus. *PLACOBDELLA RABOTI* and *GUERNEI* are described as new species.

PART III. contains :—*Courtes Notices sur les Hirudinées XIII.*, by Dr. Raphael Blanchard. *Contribution à l'étude de la faune microscopique des eaux de Paris et de*



*ses environs*, by A. Certes. *SPHAEROMA DUGESI*, *n.sp.*, by Adrien Dolfus, for a new species from Aguas-Calientes, Mexico. *Congrès international de Zoologie*. A permanent Committee was constituted as follows :—

President : M. Milne Edwards (Paris).

Vice-Presidents : M. Jentink (Leyden), Count Kapnist (Moscou), M. Th. Studer (Berne), M. L. Vaillant (Paris).

General Secretary : Dr. Raphael Blanchard (Paris).

Secretary : Baron J. de Guerne (Paris).

The Permanent Committee proposes the following question for the prize of His Royal Highness the Tzarevitch, which will be delivered in 1895 at the Leyden Congress :—

*Study of the fauna of one of the great regions of the world, and the relations of that fauna with the neighbouring ones.*

Manuscripts or printed works must be in French, and sent to the President of the Committee, 7, Rue des Grands Augustins, Paris, before the first of May, 1895. *Anomalie de la Carapace chez la Cistude d'Europe*, by Dr. Raphael Blanchard. *Une nouvelle planaire terrestre d'Europe*, by L. von Graff. *RHYNCODEMUS PYRENAICUS* is the name bestowed for it. *Notes sur quelques Amphipodes Méditerranéens, de la famille des Orchestidae*, by Ed. Chevreux. *Etude des Mues subies par les chenilles de la livrée*, BOMBYX NEUSTRIA, by T. Lignières. *Sur une pierre de serpent*, by Dr. Raphael Blanchard. *Description d'une nouvelle Hélice de Kabylie*, by C. F. Ancey. *HELIX SUBAPERTA* is the name given. *Description d'une espèce nouvelle de Pupa provenant de l'Algerie*, by C. F. Ancey. *PUPA CARTENNENSIS*. *Description d'une nouvelle espèce de CYPRIS, vivant dans les eaux thermales du hammam-meskhoutine*, by R. Moniez. *CYPRIS BALNEARIA* is the name proposed for it.

PART IV. contains :—*Note sur une adaptation particulière de certains, Chromatophores chez un Céphalopode*, *CHIROLEUTHIS BOMPLANDI*, Vérant, by Dr. Jourbin. *HETEROCHAETA GRIMALDII*, *Calanide nouveau provenant de la troisième campagne scientifique du yacht, l'HIRONDELLE*, by Dr. Jules Richard. *ALLOLOBOPHORA SAVIGNYI*, *Lombricien nouveau du sud ouest de la France*, by M.M. J. de Guerne and R. Horst. *Diagnose d'une espèce nouvelle de Rongeur du genre*, *GOLUNDA de la collection Dybowskyi*, by E. de Pousargues. *GOLUNDA DIBOWSKYI* is the name proposed for

it. Five specimens were obtained near the post fixed by Mr. Dybowsky on la Kemo, by  $6^{\circ} 17'$  latitude North, and  $17^{\circ} 15'$  longitude East. *Description d'un*, LECANIUM MEXICAIN, by T. D. A. Cockerell. LECANIUM SCHINI, Licht litt, is the name proposed for it. *Etude sur les Fourmis*, by Ch. Janet. *Spongiaires récoltés par Mr. Ch. Alluaud aux Iles Sechelles*, by E. Topsent. *Note sur la faune des Spongilides de France*, by E. Topsent. *Note sur quelques éponges du golfe de Tadjoura, recueillies par Mr. le Docteur L. Faurot*, by E. Topsent, AXOSUBERITES is proposed for a new genus. ANOXUBERITES FAUROT, RENIERA RAMUSCULOIDES and DEPRESSA are proposed for three new species.

PART V. contains :—*Crustacés Isopodes terrestres from Seychelles*, by Adrien Dolfus. ANOMALISCUS is proposed for a new genus. ANOMALISCUS OVATUS and TYLOS MINOR are proposed for two new species. *Sur le mouvement de manège chez les Insectes*, by Alphonse L. Herrera. *Courtes Notices sur les Hirudinées*, by Dr. Raphael Blanchard, XX., XXI., XXII. and XVIII. *Notes pour servir à la faune du Département du Doubs (Oiseaux)*, by E. Oustalet. Fifty-two species are enumerated. *Sur deux Coccidies nouvelles, parasites des poissons*, by Alphonse Labbé. *Coccidium lucidum* and *Coccidie de la Motelle* are the names proposed. *Arachnides des Iles Sechelles*, by E. Simon, *Cryptotrele alluaudi*, *Clubiona marensis*, *Dendrolycosa tenella*, *Oxyopes alluaudi*, and *Viciria tenuimanus*, are the names proposed for the new species discovered by Mr. Alluaud.

PART VI. and last for 1893, contains :—*Sur quelques Gordiens nouveaux ou peu connus*, by Lorenzo Camerano. *Gordius raphaelis*, is proposed for a new species. *Du nom générique des Caimans à plastron osseux*, by Leon Vaillant. *Sur le transport des Oeufs d'un nid dans un autre par une Perdrix grise*, by Xavier Raspail. *Note sur un second exemple d'incubation commencée et continuée par un mâle de Passereaux*, by Xavier Raspail. *Sur le mouvement de manège chez les Insectes*, by Raphael Dubois.

*A propos d'une méduse observée par le D'Tautain, dans le Niger, à Bamakou (Soudan français)*, by Jules de Guerne. *Note sur les PLATYPEZIDAE, fossiles de l'ambre tertiaire*, by Fernand Meunier. *A propos de nomenclature*, by Ph. Dautzenberg and G. Dolfus. A rejoinder to Doctor Ch. Girard. *Notes pour servir à la faune du Département du Doubs (Mammifères)*, by E. Oustalet. *Sur la vitesse de croissance*



*chez les Souris*, by Remy Saint Loup. *Du langage chez le Coq et la Poule ordinaires*, by L. B. de Kerhervé. *Sur le nouveau Diapysde, du Mexique*, by T. D. A. Cockerell. MYTILASPIS PHILOCOCCUS, is the name proposed for it.

1892.—CONGRÈS INTERNATIONAL DES AMÉRICANISTES COMPTE RENDU DE LA HUITIÈME SESSION TENUE À PARIS EN 1890, Paris. This large volume of 704 pages of text is exceedingly interesting. Fine portraits of Armand de Quatrefages, and Ferdinand Denis are given. Contents:—*Preface*, by Désiré Pector, General-Secretary. *Reports of Meetings, Receptions, etc.*, *Quelques observations sur l'origine du mot AMERICA*, by E. T. Hamy. Mr. Hamy is of my opinion (*Humming Bird*, 1892, pp. 118-119) that the name AMERICA, is derived from *Americo* or *Amerigo*, Vespuci. *Amerriques, Amerigho Vespucci, Amerique*, by Jules Marcou. Mr. Marcou opines that the name AMERICA is derived from the Sierra AMERRIQUE, Chontales, Nicaragua. *Sur le nom AMERRISQUE*, by Désiré Pector. He is of the same opinion as M. Hamy and myself. *El nombre de AMERICA*, by Julio Calcaño. He is also of the same opinion as ourselves about the origin of that name; but he says that Americo Vespuci is innocent of it. It was done after his death, and its origin can be traced in LA COSMOGRAFIA, published in Lerona in 1509, by Waldseemüller. *Premiers Découvreurs de l'Amérique, Sur les communications préhistoriques entre l'ancien monde et l'Amérique*, by Hyde Clarke. *The Missing Records of the Norse Discovery of America*, by Mrs. Marie A. Shipley. *Migration des Gaels en Amérique au moyen âge*, by E. Beauvois. *Situation géographique des anciennes colonies scandinaves*, by Prof. Valdemar Schmidt. *Découvertes des Portugais en Amérique au temps de Christophe Colomb*, by Paul Gaffarel and Charles Gariod. *Observation sur l'histoire du Bananier en Amérique*, by Dr. A. Ernst. *Les dernières recherches sur l'histoire et les voyages de Christophe Colomb*, by J. Silverio Jorin. A portrait of Christopher Colomb is given. *Sobre el lugar cierto en que reposan las cenizas de C. Colon*, by Francisco Henriquez y Carvajal. *On some points on the early Cartography of North America*, by John B. Shipley. *Sur quelques documents peu connus relatifs à la découverte de l'Amérique*, by Gabriel Marcel. *Sur la question de la pluralité et de la parenté des Races en Amérique*, by H. ten Kate. *Les premiers Américains*, by Marquis de Nadaillac. *Origine asiatique des Esquimaux*, by l'abbé Emile Petitot. *La déformation artificielle du*

crane chez les tribus indiennes du Nord Ouest des Etats Unis et de la Colombie britannique, by Dr. Fernand Delisle. Woodcuts of deformed skulls are given.

*Les Clif-Dwellers de la Sierra Madre*, by Dr. Hamy.—*Anomalies et Mutilations dentaires des Tarasques*, by Dr. N. Léon. *Déformations dentaires artificielles chez les Indiens de l'isthme de Panama*, by A. L. Pinart. *Collection de Portraits d'Indigènes du Brésil*, by Dr. P. Ehrenreich. *L'homme fossile du Rio Samborombon*, by Dr. J. Vilanova. *Anthropologie fuégienne*, by Dr. Deniker. *Sacred hunts of the American Indians*, by John G. Bourke. *Mémoire sur les analogies qu'ou peut signaler entre les civilisations de l'Amérique du Nord, de l'Amérique centrale et les civilisations de l'Asie*, by Désiré Charnay. *UITZILOPOCHTLI, Dieu de la Guerre des Astèques*, by Dr. Ed. Seler. Woodcuts of several gods are given. *L'orfèvrerie des anciens Mexicains et leur art de travailler la pierre et de faire des ornements en plumes*, by Dr. Edward Seler. Two very interesting coloured plates representing Indians working, and feathered ornaments are given. *Sur le Quetzal (APANECAIOTL) ou coiffure Mexicaine en plumes, conservée à Vienne*, by Mrs. Zelia Nuttall. *Ouvrages en plumes du Mexique*, by Mrs. Zelia Nuttall. *Mélodies populaires des Indiens du Guatemala*, by Raymond Pilet. Several pieces of music are given. *Note sur les limites des civilisations de l'ithsme américain*, by A. L. Pinart. *Aperçu sur l'ile d'Aruba, ses habitants, ses antiquités, et ses pétroglyphes*, by the same Author. *Monographie des Caraïbes*, by R. de Semallé. *Les Fuégiens à la fin du xvii. siècle*, by G. Marcel. *On some claims of the American Indians*, by S. B. Evans. *Du Développement d'empreintes de produits textiles, sur les poteries russes, et de leur conformité avec les produits similaires de l'Amérique du Nord*, by Prince P. A. Poutjatine. *Essai de classification chronologique des Monuments de l'Amérique précolombienne*, by Marcel Daly. *Archéologie mexicaine*, by Dr. A. Penafiel. *Sur les peintures à fresque des anciens palais de Mitla (S. Mexico)*, by Dr. Ed. Seler. One coloured plate is given. *Etudes archéologiques sur le Salvador précolombien*, by Capt. de Montessus. *Pétroglyphes de l'isthme américain de l'Amérique centrale, des grandes et petites Antilles*, by A. L. Pinart. *Ruines de Tiahuanaco*, by Th. Ber. *Rapports négatifs des langues américaines et polynésiennes*, by Prof. G. Cora. *Les noms des métaux chez différents peuples de la Nouvelle Espagne*, by Count de Charencey. *Terminaison du*



*pluriel dans les langues.* MEXICANO-OPATA, by Dr. V. Reyes. *Notices sur les langues Zapotèque et mixtèque*, by Dr. Ed. Seler:—CHONTALES and POPOLUCAS. A contribution to *Mexican Ethnography*, by Prof. D. G. Brinton. Several vocabularies are given. *Considérations sur quelques noms indigènes de localités de l'isthme centre-américain*, by Désiré Pector. *Sur le mot, ANAUAC*, by Dr. Ed. Seler. *De l'infixation dans la langue MOSQUITO*, by L. Adam. *Vocabulario de la lengua*, ATANQUES, by Dr. Rafael Celedon. *Langue*, OYAMPI, by L. Adam. *Langue roucouyenne*, by L. Adam. *Linguistique* GUARANI, by Dr. C. F. Seybold. *Esquisse d'une grammaire et d'un vocabulaire* BANIVA, by R. de la Grasserie. *Vocabulaire des Fuégiens, à la fin du XVIII. SIÈCLE*, Extrait du Mémoire de Mr. G. Marcel. *Collection* BOTURINI-AUBIN-GOUPIL, *de manuscrits figuratifs mexicains*, by Auguste Genin. *Le Codex Troano et le Codex Cortesianus*, by J. de la Rada y Delgado, *Les Codices et les Calendriers du Mexique et de l'Amérique centrale*, by Georges Raynaud. *On the Codex Poinsett*, by H. Phillips, jun. *La Période paléolithique dans l'Amérique du Nord*, by Dr. Th. Wilson. Many woodcuts are given. This is a very important work, as can be seen by its contents, and I congratulate heartily my friend Mr. Désiré Pector, the General Secretary, for the great care and trouble which he has had in editing this splendid Volume.

1892.—BOLETIM DA SOCIEDADE DE GEOGRAPHIA DE LISBOA. 11a, Serie No. 1—12. Contents of No. 1, *List of Members*; No. 2, *Descobertas e descobridores*. DIEGO CÃO, by Luciano Cordeiro; No. 3, DIEGO D'AZAMBUJA, by Luciano Cordeiro; No. 4, VASCO DA GAMA, by the same author; No. 5, *Participação portuguesa na celebração hespanhola da centenário da chamada descoberta por Columba*:—*Escolha do horizonte fundamental para as altitudes da Europa*, by Count d'Avila; No. 6—8, *Expedição portuguesa a M. Pesène, 1889*; relatório de Carlos Wiese, Continued:—No. 9, *Etude sur un poisson des grandes profondeurs du genre, HIMANTOLOPHUS, dragué sur les côtes du Portugal*, by A. A. Girard. *Description d'une ECHENEIS nouveau des côtes du Portugal*, by the same author. ECHENEIS PEDICULUS, is the name proposed for it. Black plates of HIMANTOLOPHUS GROENLANDICUS, and ECHENEIS PEDICULUS are given. *Duas viagens de Almigi de Giovani, veneziano, a Calecut nos annos de 1529 a 1532, traducidas do livro*, VIAGGI FATTI DA VINEGIA ALLA TANA IN PERSIA, IN INDIA ET IN CONSTANTINOPOLI, by

Antonio Pereira de Paiva e Pona. *Geographia medica (o clima de Tauger, no tratamento da tísica pulmonar* by the same author. No. 10, *a circumnavegação do Africa offerecida a Sociedade de Geographia*, by A. E. de Cavalheiro e Sousa. O JAU, *Conferencia na Sociedad de Geographia de Lisboa*, by Padre Wieder. O. coronel Borges. No. 11.—*Documentos de Macau copia da correspondencia relativo a missão, do Conseikhero Adriano Accacio*, by Silveira Pinto, Encargado de negocio com o Vice Roi Ki-ing em 1843. *Actas de 1892*. No. 12, *Espedicao ao Humbe, Bibliographia. Catalogo das publicacoes feitas pela Sociedade de Geographia de Lisboa. Actas de 1892*. 12a, Serie No. 1.—*Portuguezes fora de Portugal, Berengella e Leonor rainhas da Dinamarca*, by Luciano Cordeiro. *Berengaria et Leonora*, note historique, de Mr. C. Brunn.

1893, No. 2.—*Album da gruta de Camoes*, copia enviada à Sociedade de Geographia de Lisboa pelo Governor de Macau. *Um Costume dos habitantes do Pegu*, by Sousa Viterbo. *De Dubran a Beira*, by Carlos T. Alford. *Espedicao ao Humbe*, by Capt. Joaquim, Maria Luna de Carvallio. *Bibliographia*. Nos. 3—4, *Mitras lusitanas no Oriente*, by Casimiro C. de Nazareth. Nos. 5—6. *America austral. Cartas escriptas da America nos annos de 1822, a 1883*, by A. Lopez Mendez. First Part, *Bibliographia. Actas de 1893*.

1893. — SOCIEDADE DE GEOGRAPHIA DE LISBOA, INDICES E CATALOGOS, A BIBLIOTHECA.

1892—93. *Memorias y Revista de la Sociedad Cientifica Antonio Alzate, Tome VII*. Mexico. Numeros 5—12. In number 5, there is a very interesting account of Les Ruines Zapothèques du Cerro de Quiengola, near Tehuantepec (Oaxaca) by A. Estrada. A good plan of the ruins accompanies the relation. In numbers 9—12, *Moyens de défeuse chez les animaux*, by A. L. Herrera.

1893—94.—In Numbers 1—4, *L'homme préhistorique au Mexique*, by A. L. Herrera, a very interesting memoir.

1893, October 21st.—REVISTA MENSUAL DE LA SOCIEDAD GUATEMALTECA DE CIENCIAS, *Guatemala*. This is a new Journal, to which I wish a long life. Three numbers have been issued. The first is dated October 31st. In Parts 2 and 3, there is a very good memoir entitled: — *Apunamientos sobre los estudios de Biologia de Guatemala, e importancia de estos estudios*, by Juan José Rodriguez, the well-known Naturalist. He gives a detailed account



of all the Naturalists who have explored Guatemala from 1796, up to date. He also mentions many of the works published on the fauna and flora from Guatemala, and lastly he hopes that the Government will soon decree the formation of a Museum of Natural History in the Capital. I add my wishes to that of my old friend, and I hope to hear soon that it is done.

1893.—THE ENTOMOLOGISTS' MONTHLY MAGAZINE, edited by M. M. Barrett, Champion Douglas, Fowler, Mc Lacklan, Saunders, and Lord Walsingham Second Series, Vol. IV., London, in twelve parts. This Volume contains 292 pages of text, several black plates, and two very good portraits of STANTON and WESTWOOD. This excellent Magazine contains a very large number of contributions, chiefly on British and European Insects. Page 37, PIMPLA EPEIRÆ, is proposed by Mr. Bignel for a new species of that genus, found in the egg-bag of a spider; EPEIRA CORNUTA, at Ivybridge, South Devon. Pages 39-41, ASPIDIOTUS PALMAE, and DIASPIS TENTACULATUS, are proposed by M. M. Cockerell and Morgan for two new species of West Indian Coccidæ.

Pages 61-63. — NIPHE AETHIOPICA, PEROMATUS BOLIVIANUS, PHTHIA CANTHARIDINA, ZELUS FILICAUDA and RHAPHIDAZOMA ATKINSONI, are the names proposed by Mr. E. Bergroth for five new species of RHYNCHOTA from West Africa, Bolivia, Ecuador, and India.

Page 83. — RHYZOPHAGUS NOBILIS, and ANCISTRIA REITTERI, are proposed by Mr. Lewis for two new species of Japanese Coleoptera.

Page 105-106.—ALEURODICUS ORNATUS, is proposed by Mr. Cockerell for a third species of ALEURODICUS, from Jamaica.

Page 151.—The name LYGAEOSCYTARIA is proposed by Mr. Reuter for a new division allied to LYGAEIDAE and CAPSIDAE. He names this curious Cupid, from Tasmania, LYGAEOSCYTUS CIMICOIDES, new genus, and new species.

Page 152.—XIPHOCERA ENSICORNIS, is proposed by H. de Saussure, for a new species of Orthoptera, from Transvaal.

Pages 153-155, the name of PSEUDINGLISIA, is proposed for a new genus of COCCIDAE, born in England, on plants freshly imported from Trinidad. He calls the species, PSEUDINGLISIA RODRIGUEZIAE.

Page 155—58, MYTILASPIS ALBUS and PINNASPIS BAMBUSAE, are the names proposed by Mr. Cockerell, for two new species from West Indies.

Page 182, ANAXITA DRUCEI, is the name proposed by Juan Rodriguez, for a new species of that genus, from Guatemala.

LOCNIS CONCINNA, is proposed by Mr. Distant, for a new species of *Homoptera* from South Africa.

Page 183—185, NIPONIUS ANDREWESI, PARVULUS, and TRYPETICUS INDICUS, are the names proposed by Mr. Lewis, for three new species of *Histeridae*, from Kanara, India.

Pages 185—88, ASPIDIOTUS COCOTIS, AFFINIS, and DIASPIS OPUNTIAE are the names proposed by Mr. Newstead, for three new species of *Coccidae* from Demerara.

Page 204, HERCYNELLA, is the name proposed by Mr. Bethune Baker, for a new genus allied to HERCYNIA. H. STAUNDINGERI and MARGELANA from Shah Kuh Mountains, Persia, are described as new.

Pages 205, LECANOPSIS FORMICARUM, is the name proposed by Mr. Newstead, for a new species of *Coccidae* from Chesil Beach.

Page 252, PROSTEMMIDEA is proposed by Mr. Reuter for a new genus of *Lygaeidae*, from Bombay. P. MIMICA is the type of this new genus.

Pages 253—55, TRACHYSCELIS CILIARIS, LAEVIS, and PALLENS, are proposed by Mr. Champion, for three new species of this genus, from Australia and Ceylon.

Page 274, PLATYDEMA ASYMMETRICUM is the name proposed by Mr. Champion for a new species of PLATYDEMA, from Damma Island, near Timor.

Page 275, PSEUDOMOLPUS is proposed by Mr. Jacoby for a new genus of Phytophagous Coleoptera from Gaboon. *P. dimidiatus*, n.sp., is the type of this genus.

Page 277—78, the name of HALOVELIA is proposed by Mr. Bergroth for a new genus of Hemiptera from Cartier Island, Timor, and N.W. Australia. H. MARITIMA, n.sp., is the type of this genus. ACANTHIA SALINA is proposed by the same author for a new species of that genus from N.W. Australia.



1893.—ORNITHOLOGISCHE MONATSBERICHTE, edited by Dr. Ant. Reichenow, Berlin. A new and interesting Journal, containing many interesting memoirs by well-known writers.

Page 11—12, POECILOTHRAUPIS MELANOPS, CHLOROSPINGUS VENEZUELANUS, GRALLARIA EXCELSA, CONIROSTRUM INTERMEDIUM, EMPIDAGRA BAHIAE, and SERPOPHAGA, MUNDA, are the names proposed by Mr. Berlepsch, for five new species of birds from South America. *Leucotreron meridionalis* is proposed by M. M. Meyer and Wigglesworth, for a new species from Macassar.

Page 28, *Xenocickla clamans*, is proposed by Mr. Sjöstedt, for a new species of that genus.

Pages 29—32, SYMPLECTES STUHLMANNI, PLOCEUS INTERSCAPULARIS, RUFONIGER, PACHYRHYNCHUS, MALIMBUS CENTRALIS, TURACUS EMINI, TRICHOLAEMA FLAVIBUCCALE, DENDROPICUS POECILOLAEMUS, *Caprimulgus* NIGRISCAPULARIS, STILBOPSAR, n.g. Type, S. STUHLMANNI, TSERPSIPHONE EMINI, PARUS FASCIIVENTER, *Cinnyris regia*, *Camaroptera axillaris*, RECTIROSTRUM, n.g. Type, R. HYPOCHONDRICUM, are the names proposed by Dr. Reichenow, for two new genera and fifteen new species, discovered in Central Africa, by the late celebrated Emin Pacha, and Mr. Stuhlmann.

Page 41, COLUMBA PALLIDA, is proposed by M. M. Von Rotschild and E. Hartert, for a new species.

Pages 42—44, PODICA CAMERUNENSIS, TROCHOCERCUS ALBIVENTRIS, SYMPLECTES CASTANICAPILLUS, and ALSEONAX OBSCURA, are proposed by Mr. Sjöstedt, for four new species from Cameroons.

Pages 60—62, TELEPHONUS EMINI, CINNYRIS PURPUREIVENTRIS, MELOCICHLA ATRICAUDA, CISTICOLA NUCHALIS, and GLAUCIDIUM CASTANEUM, are proposed by Dr. Reichenow, for five new species collected in Central Africa, by M. M. Emin and Stuhlmann.

Page 65, GLAUCIDIUM SJÖSTEDTI, is proposed by Dr. Reichenow, for a new species from Cameroons. GOURA HUONENSIS, is proposed by Mr. Meyer for a new species from North New Guinea.

Page 84, CENTROPUS FLECKI, is proposed by Dr. Reichenow, for a new species from Damaraland. CISTICOLA DISCOLOR, is proposed by Mr. Sjöstedt for a new species from Cameroons.

Page 138, *DEUDROPICUS REICHENOWI*, is proposed by Mr. Sjöstedt, for a new species from Cameroons.

Page 177, *TURDINUS RUFIVENTRIS*, *BURNESIA TAENIOLATA*, *DENDROPICUS LACUUM*, and *GLAUCIDIUM KILIMENSE*, are proposed by Dr. Reichenow, for four new species from Cameroons, Karevia and Kilimandjaro.

Page 205, *MALIMBUS ERYTHROGASTER*, is proposed by D. Reichenow, for a new species from Cameroons.

1893.—*THE CANADIAN ENTOMOLOGIST*, edited by Rev. C. J. S. Bethune, Ontario. Many new species of Insects are described in this Volume.

1893.—*TWENTY - THIRD ANNUAL REPORT OF THE ENTOMOLOGICAL SOCIETY OF ONTARIO*. Many woodcuts of injurious Insects are given. *The songs of our grasshoppers and crickets*, by S. H. Scudder, is well worth reading. Musical notes of several species are given.

1893.—*APPENDIX TO THE REPORT OF THE MINISTER OF AGRICULTURE ON EXPERIMENTAL FARMS*, Ottawa. One Volume with 289 pages of text and woodcuts.

1893.—*CENTRAL EXPERIMENTAL FARM*, Ottawa. Bulletin No. 19. *Grasses, their uses and composition*, by James Fletcher.

1892.—*BULLETIN OF THE UNITED STATES NATIONAL MUSEUM*, No. 40. *Bibliographies of American Naturalists. IV.—The published writings of George Newbold Lawrence, 1844-1891*, by L. S. Foster, with a fine portrait of Lawrence. One hundred and twenty-one memoirs of this celebrated Ornithologist are mentioned. In these, 323 new species of birds are described. Names and habitats are given for each species.

1893.—*THE PRAIRIE GROUND SQUIRRELS, OR SPERMOPHILES OF THE MISSISSIPPI VALLEY*, by Vernon Bailey, Washington. Sixty-seven pages of text, coloured plates of *SPERMOPHILUS TRIDECIMLINEATUS*, *FRANKLINI* and *RICHARDSONI* are given. A very interesting memoir on these Mammals, mentioning their natural enemies, the methods of destroying them, and a full account of the three species figured.

1893.—*NORTH AMERICAN FAUNA*, No. 7; *THE DEATH VALLEY EXPEDITION, a biological survey of parts of California, Nevada, Arizona, and Utah*. Part II.—Washington. This important volume of 393 pages contains:—



*Report on Birds*, by A. K. Fisher.

*Report on Reptiles and Batrachians*, by Leonhard Stejneger.

*Report on Fishes*, by Charles H. Gilbert.

*Report on Insects*, by C. V. Ryley.

*Report on Mollusks*, by E. C. Stearns.

*Report on Desert Trees and Shrubs*, by C. Hart Merriam.

*Report on Desert Cactuses and Yuccas*, by C. Hart Merriam.

*List of Localities*, by T. S. Palmer. Fourteen black plates and five maps are given. SCELOPORUS CLARKII, MAGISTER, ZOSTEROMUS, ORCUTTI, BOULENGERI, and FLORIDANA, are figured on plate i. PHRYNOSOMA CORNUTUM, BLAINVILLEI, GOODEI, and PLATYRHINOS, on plate ii. XANTUSIA VIGILIS, SALVADORA HEXALEPIS, BUFO HALOPHILUS, NELSONI, and RANA FISHERI, sp. nov., on plate iii. SAUROMALUS ATER on plate iv. EMPETRICHTHYS MERRIAMI, gen. et sp. nov., on plate 5. RHINICHTHYS NEVADENSIS, sp. nov., and VELIFER, sp. nov., on plate vi. OPUNTIA ACANTHOCARPA, WHIPPLEI, PARRYI, and RUTILA, on plates vii. to xi. YUCCA BACCATA, ARBORESCENS, and MACROCARPA, on plates xii. to xiv. AMNICOLA, MICROCOCCUS, and FLUMINICOLA MERRIAMI, are figured in text, pages 277 and 282. The fine maps illustrate:—*The General Route-Map of the Expedition, Lower Division of the Lower Sonoran Zone, Distribution of Leconte thrasher* (HARPORHYNCHUS LECONTEI), *Distribution of the Creosote Bush* (LARREA TRIDENTATA) and *Distribution of the Tree Yucca* (YUCCA ARBORESCENS). Derivations, names, and localities, are given for 137 species of Birds and 56 species of Reptiles, 13 species of Fishes. A list of about 800 species of Insects is given, many new species are pointed out; two new genera and 18 species of DIPTERA are described, also one new genus, and 10 new species of HEMIPTERA HETEROPTERA, and two new species of ORTHOPTERA. 47 species of MOLLUSKS are pointed out, among which, one new species, AMNICOLA MICROCOCCUS. A list of 144 species of trees and shrubs, is given, and lastly 23 species of CACTUSES, YUCCAS and AGAVE.

1892.—ANALES DEL INSTITUTO FISICO-GEOGRAFICO Y DEL MUSEO NACIONAL DE COSTA RICA, Tome III., San José, Costa-Rica. Contents:—*Observaciones meteorologicas, Viaje de Exploracion al Rio Grande de Terraba*, by H. Pittier, with map. *La Parte Sur Este de la Republica de Costa-Rica*,

by Dr. A. von Frantzins. *Apuntamientos para la historia natural de Costa-Rica*, by H. Pittier. CRUSTACEOS, INSECTOS, Y MOLLUSCAS. *Resultados de las observaciones meteorologicas practicadas en el año de 1890*, by H. Pittier. *Descripcion de una especie nueva de "GALLINA DE MONTE,"* by José C. Zeledon. ARAMIDES PLUMBEICOLLIS is the name proposed. *Descripcion de tres especies nuevas para la fauna costariense*, by G. K. Cherrie. RAMPHOCELUS COSTARICENSIS, MYRMOCCIZA OCCIDENTALIS, and GRALLARIA LIZANOI, are the names proposed. *Antiquedades de Costa Rica*, by Dr. H. Polakowsky. A fine photograph illustrating eleven rare antiquities is given. *Aves colectadas en Costa Rica*, by Adolfo Boucard. It is a traduction of my paper published in the Proceedings of the Zoological Society of London, January, 1878, made by Anastasio Alfaro. *Resena de las principales Aves, que habitan la parte superior del Volcan de POÀS*, by Anastasio Alfaro. *Investigaciones sobre el azucar del AGAVE AMERICANA*, by Gustavo Michaud y José Fidel Tristan.

1891.—MEMORIA DE LA SECRETARIA DE GOBERNACION POLICIA Y FOMENTO, *San José, Costa Rica*.

1892.—DIE VOGEL DER INSEL CURACAO, by Hans von Berlepsch. In this memoir Mr. Berlepsch mentions all the works published anteriorly, on the birds of *Bonaire, Curacao* and *Aruba*, and gives a list of all the species recorded from these Islands. On page 91, TINNUNCULUS BREVIPENNIS is proposed for a new species from Curacao.

1891.—KATALOG DER VOGELSAMLUNG, IM MUSEUM DER SENCKENBERGISCHEN NATURFORSCHENDÉN GESELLSCHAFT in FRANKFURT AM MAIN, by Ernst Hartert, Frankfurt. 259 pages of text. This is a complete list of the species of birds, in the collection of the Museum of Francfort. 3,612 species are enumerated.

1892.—CATALOGUE OF A COLLECTION OF BRITISH BIRDS *formed by the late MR. JOHN HENRY GURNEY AND HIS SON*, by the latter, with the localities, sex, and state of plumage, London.

1891.—A LIST OF MOLLUSCA AND OTHER FORMS OF MARINE LIFE, *collected in the years 1889—1890, in JAPAN*, by Frederick Stearns. Detroit. One black plate is given.

1891.—VIAGGIO DI LEONARDO FEA, in BIRMANIA E REGIONI VICINE:—ODONATES, by Edm de Selys Longchamps, Genova. Many new species are described in this memoir.



1893.—LA CHASSE AUX PETITS OISEAUX par le Baron d'Hamonville. (*Revue des Sciences Naturelles appliquées*), Paris, Baron d'Hamonville wishes that it should be prohibited to shoot small birds, to obviate their rapid extinction in the Department of Meurthe-et-Moselle.

1893.—RAPPORT SUR UNE MISSION EXÉCUTÉE DANS LA MER ROUGE ET LE GOLFE D'ADEN, by Doctor Jousseau, Paris.

1893-94.—THE ENGLISH ILLUSTRATED MAGAZINE, London, Illustrated London News Office. In No. 121, October 1893, there is an interesting memoir entitled:—*A Naturalist in a Swiss Forest*, by C. Parkinson, with very good illustrations, by George E. Lodge. In Number 124, January 1894, THE ZOO REVISITED, *A Chat with the Sacred Ibis*, by Phil Robinson, is spirited and very good. In the course of his chat with the Ibis, Mr. Robinson remarks that different species of birds are put together in the same cage, and that labels with the names of the species enclosed, are attached to the cage, but that it is quite impossible for the Visitor to make out which is which. That is what I have found myself in many Zoological Gardens, and it ought to be remedied at once, by giving illustrations, with names of the species exhibited.

1893.—SCIENCE AND ART AND TECHNICAL EDUCATION, edited by John Mills. London: Chapman and Hall. Very good illustrations are given.

1893.—THE INTERNATIONAL CHRISTMAS RECORDER, in New York Recorder, December 10th.

Contents:—*Wealth and Progress of the United States*. A lot of information on *Natural Finances, Gold and Silver, Iron Ore Product, An Economical Process of extracting gold, A Yatch on Wheels*, etc., etc.

1893.—THE ANTIGUA OBSERVER, edited by Daniel W. Scarville, EL PORVENIR, edited by Antonio Araryo, Carthagena, Columbia, etc., etc., etc.

## SOCIEDADE DE GEOGRAPHIA DE LISBOA.

In the Session held on the 10th April, 1893, our Chief Editor, Mr. Adolphe Boucard has been elected Corresponding Member of the Geographical Society of Lisboa, Portugal.

## THE FLYING MAN.

BY THE EDITOR.



GERMAN, Mr. OTTO LILIENTHAL, a practical worker, has successfully invented an apparel, not exactly adequate for flying about, but quite good enough to precipitate himself into space from an elevated spot or eminence. During three years Mr. Lilienthal has been studying the mechanism of wings in birds, and the result was the construction of an apparel consisting chiefly of two gigantic wings, about sixteen yards square, when opened. These wings, weighing forty-two pounds, are fixed on a skeleton frame made with osier, in the centre of which the experimenter sits. From his seat he can easily modify the inclination of the wings, and direct two rudders, fixed at the back of the apparel.

With the exception of the hands, which lay on a transversal bar, the rest of the body is entirely free in its movements, and by sloping it more or less to the right or to the left, modifies the position of the centre of gravity of the apparel.

After numerous experiments, resulting in acquiring the perfect manipulation of the wings and rudders, Mr. Lilienthal made up his mind to experiment his flying machine. He first took his flight from a tower, twelve feet high, which he purposely built for that purpose. He was so successful that his next attempt was made from a hill, about three hundred feet high. He landed at a distance of nine hundred feet from the hill, leisurely and without the least difficulty.

During the aerial voyage, he worked the wings so, as to accelerate or delay the descent at will. He succeeded also to fly against the wind. Therefore we can say with certainty that the first step for the manufacturing of flying machines is an accomplished fact, and before long, man will have conquered AIR at last.

Mr. Lilienthal himself confesses that much remains to be done to make his apparel perfect; but with the elements worked upon by him, it will not take long now, to construct a perfect machine, which will enable Man to explore that domain. I congratulate, heartily, Mr. Lilienthal for his important discovery, to which his name will remain permanently associated, as the first practical discoverer of this most interesting and scientific problem.



To Mr. Lilienthal, and to others who will follow him, I will suggest this:—If you want to solve satisfactorily and quickly, the problem of travelling into space with a flying machine, follow the path so well laid out by Mr. Lilienthal. Study first NATURE in its aerial inhabitants, viz.:—BIRDS, either alive or dead. Nature contains everything as perfect as it can be. The solution of this problem, as that of many others, is there. Are not all successful inventors after all, only imitators of the works of NATURE. For example, begin by studying the skins of a Condor or a Golden Eagle. See how the feathers of wing and tail are disposed on their wings and tail, measure their length, count their number, weigh the bodies; then make your calculations, and construct an apparatus resembling as much as possible in its formation to the wings and tails of these birds. Then study their flight, note the strength of their nerves and muscles, so as to enable you to replace these with a machine of sufficient power, according to the weight which must be lifted in the air, and at the same time enabling you to move easily wings and tail in all directions. Then you will have an apparel with which the solution of the aerial navigation problem will probably be solved.

You may also study with advantage other species of Birds, especially Hawks, Gulls, Crows, Swifts, Swallows, etc. All of these have long wings, short tails, comparatively light bodies for the length of their wings, and fly easily and swiftly.

Since ICARE, captive of MINOS, made some wings to fly away from the place of his captivity without any other result than his fall in the Algean Sea, many are the attempts which have been made to construct a flying apparatus, but not one was adequate. The most important one, was made by the Frenchman, PILATRE DE ROZIER, but he was not more successful than his predecessors. But now we can hope that before the end of this century, such a machine will exist, and will produce a revolution in the ways of travelling, at least for the audacious; because I do not see how it could ever be so vulgarised as to make it handy for the public at large.

# LIST OF PARROTS and PITTAS FOR SALE at 225, High Holborn, London, W.C.

## PSITTACI.

Nestor notabilis, Gould	..	..	30
— meridionalis, Gmel.	..	..	20
Chalcopsittacus ater, Scop.	..	..	12
— duyvenbodei, Dub.	..	..	100
— scintillatus, Tem.	..	..	12
— occidentalis, Salv.	..	..	25
Eos reticulata, Mull.	..	..	20
— cardinalis, Homb.	..	..	60
— rubra, Edw.	..	..	12
— wallacei, Finsch.	..	..	30
— riciniata, Bechst.	..	..	15
— fuscata, and Var. Bl.	..	..	12
Lorius hypoenochrous, G.R.	..	..	20
— lory, L.	..	..	16
— erythrothorax, Salv.	..	..	16
— jobiensis, Salv.	..	..	20
— domicella, L.	..	..	12
— garrulus, L.	..	..	16
Vini australis, Gmel.	..	..	20
Trichoglossus cyanogrammus, Wagl.	..	..	10
— massena, Bp.	..	..	10
— novoe hollandiae Gm.	..	..	4
— rubritorques, Vig.	..	..	30
— ornatus, L.	..	..	5
Psittenteles flavoviridis, or n.sp.	..	..	30
— meyeri, Schl.	..	..	8
— euteles, Tem.	..	..	8
— chlorolepidotus, Ku.	..	..	4
Ptilosclera versicolor, Vig.	..	..	20
Glossopsittacus concinuus, Shaw.	..	..	3
— porphyreocephalus, Diet.	..	..	12
— pusillus, Shaw.	..	..	3
Hypocharmosyna placens, T.	..	..	10
a — aureocincta, Lay.	..	..	20
Charmosynopsis pulchella, G.R.	..	..	20
Charmosyna papuensis, Gm.	..	..	12
— stellae, Mey.	..	..	16
Neopsittacus muschenbroeki, Ros.	..	..	20
— iris, T.	..	..	50
Cyclopsittacus desmaresti, Garn.	..	..	6
— coxeni, Gould	..	..	10
— diophthalmus, H. and T.	..	..	6
— suavissimus, Sclat.	..	..	20
Microglossus aterrimus, Gm.	..	..	20
Calyptorhynchus xanthonotus, G.	..	..	30
— banksi, Lath.	..	..	30
Callocephalon galeatum, Lath.	..	..	10
Cacatua galerita, Lath.	..	..	12
— triton, Tem.	..	..	20
— leadbeateri, Vig.	..	..	12
— roseicapilla, Vieil.	..	..	12
Licmetis nasica, Tem.	..	..	16
Calopsittacus novoe hollandiae, Gm.	..	..	10
Ara macao, L.	..	..	20
— chloroptera, G.R.	..	..	30
— militaris, L.	..	..	24
— severa, L.	..	..	20
— macavuanna, Gmel.	..	..	20

## Psittaci—Continued.

58 Ara nobilis, L.	..	..	10
59 — hahni, Souancé	..	..	20
60 Rynchopsittacus pachyrhynchus, Sw.	..	..	60
61 Conurus lencophthalmus, Mul.	..	..	15
62 — nenday, Desm.	..	..	16
63 — solstitialis, L.	..	..	12
64 — jendaya, Gm.	..	..	6
65 — weddelli, Dev.	..	..	20
66 — wagleri, G.R.	..	..	5
67 — chloropterus, Sou.	..	..	20
68 — holochlorus, Sclat.	..	..	20
69 — astee, Sou.	..	..	5
70 — aeruginosus, L.	..	..	5
71 — ocularis, Sclat. and Salv.	..	..	10
72 — aureus, Gm.	..	..	3
73 — canicularis, L.	..	..	8
74 Cyanolyseus patagonus, Vieil.	..	..	20
75 Gnathosittaca icterotis, M.S.	..	..	20
76 Henicognathus leptorhynchus, K.	..	..	10
77 Pyrrhura cruentata, Neu.	..	..	4
78 — vittata, Shaw	..	..	4
79 — leucotis, Licht.	..	..	5
80 — picta, Mul.	..	..	8
81 — luciani, Dev.	..	..	20
82 — egregia, Sclat.	..	..	16
83 — calliptera, Man.	..	..	4
84 — souancei, Verr.	..	..	20
85 — rhodocephala, S. and Salv.	..	..	16
86 — hoffmauni, Cab.	..	..	12
87 — chiripepe, Vieil.	..	..	20
88 Myopsittacus monachus, Bodd.	..	..	10
89 Bolborhynchus panychlorus, S. and God.	..	..	16
90 Psittacula conspicillata, Laf.	..	..	2
91 — sclateri, G.R.	..	..	50
92 — passerina L.	..	..	2
93 — guianensis, Sw.	..	..	6
94 Brotogerys tirica, Gmel.	..	..	8
95 — chiriri, Vieil.	..	..	12
96 — virescens, Gm.	..	..	8
97 — jugularis, Mull.	..	..	6
98 — chrysopterus, L.	..	..	10
99 — tui, Gmel.	..	..	3
100 Chrysotis farinosa, Bodd.	..	..	10
101 — amazonica, L.	..	..	12
102 — ochrocephala, Gm.	..	..	16
103 — panamensis, Cab.	..	..	10
104 — auropalliata, G.R.	..	..	30
105 — aestiva, L.	..	..	30
106 — albifrons, Spar.	..	..	10
107 — ventralis, Mull.	..	..	30
108 Pionus menstruus, and Var., L.	..	..	5
109 — sordidus, L.	..	..	20
110 — bridgesi, Boucard	..	..	50
111 — senilis, Spix.	..	..	6
112 — fuscus, Mull.	..	..	5
113 Deroptyus accipitrinus, L.	..	..	20
114 Triclaria eyanogaster, Vieil.	..	..	12
115 Pionopsittacus pileatus, Scop.	..	..	50



# LIST OF PARROTS and PITTAS FOR SALE at 225, High Holborn London, W.C.

## Psittaci—Continued.

	s.
116 <i>Pionopsittacus amazoninus</i> , Desm. . . . .	30
117 — <i>haematotis</i> , S. and Salv. . . . .	6
118 — <i>cocineicollaris</i> , Lawr. . . . .	16
119 — <i>pyrilia</i> , Bp. . . . .	30
120 — <i>caica</i> , Lath. . . . .	8
121 <i>Urochroma cingulata</i> , Scop. . . . .	4
122 — <i>purpurata</i> , Gmel. . . . .	6
123 — <i>surda</i> , Ill. . . . .	5
124 — <i>hueti</i> , Tem. . . . .	16
125 <i>Caica melanocephala</i> , L. . . . .	10
126 — <i>xanthomera</i> , G.R. . . . .	30
127 <i>Poeocephalus robustus</i> , Gm. . . . .	16
128 — <i>gulielmi</i> , Jard. . . . .	30
129 — <i>senegalus</i> , L. . . . .	10
130 — <i>versteri</i> , Finsch. . . . .	40
131 — <i>meyeri</i> , Rupp. . . . .	20
132 <i>Psittacus erithacus</i> , L. . . . .	10
133 <i>Coracopsis vasa</i> , Lev. . . . .	16
134 — <i>nigra</i> , L. . . . .	16
135 — <i>comorensis</i> , Pet. . . . .	20
136 — <i>barklyi</i> , Newt. . . . .	30
137 <i>Dasyptilus pecqueti</i> , Less. . . . .	20
138 <i>Eclectus pectoralis</i> , Mull. . . . .	10
139 — <i>cardinalis</i> , Bodd. . . . .	30
140 <i>Geoffroyus personatus</i> , Shaw. . . . .	8
141 — <i>aruensis</i> , G.R. . . . .	8
142 — <i>rhodops</i> , G.R. . . . .	8
143 — <i>cyanicollis</i> , Mull. . . . .	8
144 <i>Prioniturus platurus</i> , T. . . . .	12
145 — <i>flavicans</i> , Cass. . . . .	10
146 — <i>discurus</i> , Vieil. . . . .	20
147 <i>Tanygnathus affinis</i> , Wall. . . . .	16
148 — <i>mulleri</i> , T. . . . .	6
149 <i>Palaeornis nepalensis</i> , Hodg. . . . .	10
150 — <i>torquata</i> , Bodd. . . . .	5
151 — <i>docilis</i> , Vieill. . . . .	6
152 — <i>cianocephala</i> , Briss. . . . .	5
153 — <i>rosa</i> , Bodd. . . . .	10
154 — <i>schisticeps</i> , Hodgs. . . . .	12
155 — <i>peristerodes</i> , Finsch. . . . .	20
156 — <i>calthropae</i> , Lay. . . . .	20
157 — <i>fasciata</i> , Mull. . . . .	5
158 — <i>longicauda</i> , Bodd. . . . .	8
159 <i>Polytelis barrabandi</i> , Sw. . . . .	12
160 — <i>alexandrae</i> , Gould. . . . .	12
161 — <i>melanura</i> , Vig. . . . .	10
162 <i>Ptistes erythropterus</i> , Gm. . . . .	12
163 — <i>jonquillaceus</i> , Vieil. . . . .	30
164 <i>Aprosmictus cyanopygius</i> , V. . . . .	16
165 — <i>chloropterus</i> , Rams. . . . .	16
166 — <i>dorsalis</i> , Quoy. . . . .	16
167 <i>Pyrrhulopsis tabuensis</i> , Gm. . . . .	25
168 — <i>personata</i> , G.R. . . . .	30
169 <i>Psittacella brehmi</i> , Ros. . . . .	30
170 — <i>modesta</i> , Ros. . . . .	50
171 <i>Psittinus incertus</i> , Shaw . . . . .	5
172 <i>Bolbopsittacus mindanensis</i> , Steere. . . . .	20
173 <i>Agapornis pallaria</i> , L. . . . .	6
174 <i>Loriculus vernalis</i> , Sparm. . . . .	4

## Psittaci—Continued.

175 <i>Loriculus exilis</i> , Schl. . . . .	..
176 — <i>philippensis</i> , Briss. . . . .	..
177 — <i>galgulus</i> , L. . . . .	..
178 — <i>stigmatus</i> , Mull. . . . .	..
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200 <i>Nymphicus cornutus</i> , Gmel. . . . .	..
201 — <i>Nanodes discolor</i> , Shaw . . . . .	..
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216 — <i>arcuata</i> , Gould (imperfect) . . . . .	..
217 — <i>erythrogastra</i> , Tem. . . . .	..
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220 — <i>atricapilla</i> , Briss. . . . .	..
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# The Humming Bird

~ A QUARTERLY ~

SCIENTIFIC, ARTISTIC AND INDUSTRIAL REVIEW

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A. BOUCARD.



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# The Humming Bird.

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## VISITS TO THE ZOOLOGICAL SOCIETY'S GARDENS, LONDON.

### II.—THE INSECT HOUSE IN SUMMER.

**A**LTHOUGH, as I demonstrated in my article on the Insect House, which appeared in the *Humming Bird*, that building can be of great interest even in the winter, still, midsummer is the time to see it in its full glory, when insects from all parts of the world, and in all possible stages of existence, are on view in the various cases with which the house is full. Following the plan adopted in my former article, of turning figuratively speaking, to the left after passing through the doorway, the case of cocoons of (*Actias selenæ*), the Indian Moon-moth, is found to be still in the same place, but now, besides the cocoons, there are several fine specimens of the perfect insect, a truly superb moth, which must be seen in order to be properly admired. There were also, at the time of my visit, several clusters of eggs laid by these moths, which will breed somewhat freely in this country, although the larvæ require very careful rearing. They are interesting on account of the changes of colour which they undergo as they shed their skins. On being hatched they are black, with two or three red bands around the body, when this skin is shed, the colour is changed to crimson, with two rows of black tubercles along the back, each tubercle bearing several white hairs. In the third stage, they are a beautiful pale green, the tubercles on the first two or three segments being orange-coloured, and the remainder red. Each tubercle bears one or two black hairs with white tips, as well as several shorter black bristles, none of the hairs being clubbed at the tips, as is the case with those of *Antherea Pernyi* (Perny's Silk-moth), and many other species of the family Saturnidæ. These interesting larvæ feed on the Walnut Tree in this country. The eggs usually hatch about the end of June.

The second case contained more cocoons and imagines of the same species. Next to it was one containing cocoons and perfect insects of the Great Atlas Moth (*Attacus atlas*), also from India, one of the largest moths in the world. By



the side of these were cocoons of the Ailanthus Silk-moth (*Attacus cynthia*), and a number of very fine living imagines. This, which is another Asiatic species, is very easily reared in England, feeding on the Lilac as well as on the Ailanthus Tree. Unfortunately, they degenerate gradually both in size and strength in this country after two or three generations have been reared. The only way to prevent this is to import a number of fresh cocoons from Japan every year, to interbreed with the English-bred moths. A closely allied species, which, however, is not so frequently seen in this country, is the Eria Silk-moth (*Attacus ricini*), the larvæ of which, as the specific name denotes, feed on the Castor Oil Plant.

In the next case were cocoons of the Tusseh Silk-moth (*Antherea mylitta*), from which, however, no moths had emerged at the time of my visit. This species is said to produce one of the strongest silks spun, although I believe it is too difficult to wind to be used in any quantity as an article of commerce. The moth is large, of a tawny colour, with a large round spot or eyelet, destitute of scales, in the centre of each wing. The inmates of the neighbouring case were near relatives of this species, being cocoons and living imagines, or perfect insects of Perny's Silk-moths (*A. Perny*), which greatly resembles the Tusseh in general characteristics, but is considerably smaller. It comes from China. As mentioned in my former article, the larva is one of the easiest to rear in this country, feeding on Oak and Hawthorn. A closely allied species sometimes seen at this house is *A. Roylei*, which is often crossed with *A. Perny*.

The Madagascar Pratincole (*Glareola ocularis*), described in my last article, was still in the same place, looking in splendid health, as did the Electric Eels, but the Short-winged Tyrant-birds (*Machetornis rixosa*), which occupied the next cage to the Eels' tank in December last, had been removed to the Parrot House, their former habitation being tenanted by two pairs of the Bearded Titmouse (*Panurus biarmicus*), a charming European species, light brown in colour, with grey heads, the males having a number of long black feathers extending from the bill down each side of the throat, forming two lengthened black patches like moustachios, hence their name of "Bearded."

I found a change had also taken place in the wall aviary in the north-west corner of the building, our old friend the Fruit Cuckoo having been evicted from this roomy cage, which he had occupied for many years, in order to make room

for a specimen of the Oven Bird (*Furnarius rufus*), from Buenos Ayres. It is a bird of about the same size of a Thrush, which it somewhat resembles in general appearance, except that the breast is not spotted. The Cuckoo had been placed in a small cage in a recess to the aviary, and looked very crestfallen at having been turned out of his spacious apartment to make room for a new-comer. While I was there, he gave utterance to the usual cry of his family, "cuck-oo," but in a very deep, resonant tone, strikingly different to the sprightly call of his English cousin. Horsfield's Scops Owl (*Scops tempyi*), from Malacca, and a pair of the Sahara Bunting (*Fringillaria saharæ*), from North Africa, occupied two adjacent cages, as they did on the occasion of my last visit. The Undulated Grass Parroquets (*Melopsittacus undulatus*), and the Large Hill Mynahs (*Gracula intermedia*), from Australia and India respectively, were also in the same place as before.

In a small glass case next to the Mynah's cage were some curious spiders from Bahia, Brazil. These were Tree Trap-door Spiders.

The ordinary Trap-door Spiders make a burrow in the earth, with a cleverly constructed lid to it, composed of earth and silk, opening on a hinge of the latter article. When closed, this lid is exactly level with the surface of the ground, and, the top being of earth, it is perfectly indistinguishable from its surroundings. The spider slightly lifts the edge of this extraordinary trap-door, and watches for unwary insects that chance to pass that way. In the case of the particular species mentioned above, its habits are much the same, except that the burrow is constructed in the trunk of a tree instead of in the ground, the trap-door being made to assimilate with the surrounding bark. Three or four very good photographs above the case show the spider in the act of entering and leaving his tunnel, and by comparing them with the pieces of tree-trunk, one is enabled, after some difficulty, to detect the entrances to the burrows, the spiders themselves being rarely visible. I should think that these curious creatures must make a very good living, tree-trunks being such favourite resorts for all kinds of insects, especially in a country like Brazil, where insect life is so prolific.

Next to the spiders is a case of pupæ of the Bat Hawk-moth (*Deilephila vespertilio*), a European species which somewhat resembles the better-known Spurge Hawk-moth (*D. Euphorbiæ*), found in some places on the British coast. Their next door neighbours were the giant snails (*Bulimus*



*oblongus*), from Africa, which I spoke of in my former article. An interesting case to collectors of British insects was one containing young larvæ of the Pearl-bordered Fritillary Butterfly (*Argynnis Euphrosyne*), which were hatched from ova laid by a wild-caught female from Kent.

Some curious insects were to be seen in one of the large cases, namely, a great number of Stick-insects (*Diapheromera femorata*), from Canada. As their name implies, these extraordinary creatures resemble twigs of trees, being from three to four inches, and extremely slender, varying in colour from light-green to brown. The antennæ are very long, thin, and tapering, the legs been also attenuated and lengthened. Many of them, especially those of a light colour, bear a remarkable resemblance to the skeleton of a leaf, the remaining portion of which, has been eaten by some insect, leaving the principal ribs or veins bare. These insects are interesting on account of this being the third generation in succession raised in the Insect House from the original ova, and yet they do not show the slightest deterioration either in size or vigour. They feed on the leaves of plants, like the locusts and grasshoppers, and judging from the voracity which these specimens exhibited, I should imagine that they must be very destructive where found in any number.

There were several species of Silk-moths in cases close to the Stick-insects, one being the Cecropian Silk-moth (*Samia cecropia*), a large species from North America, the prevailing colour of which is a warm gray, with a reddish crescent-shaped mark in the centre of each wing. It is a fine moth, very easily reared in this country. Another species was the Polyphemus Silk-moth (*Telea polyphemus*), also North American; this is another good-sized moth, somewhat resembling the genus *Antherea* in the shape of the wings and general appearance. The colour is tawny, with a large circular spot, denude of scales, in the centre of the hind wings, which spot is surrounded by a patch of dark-coloured scales. In the next case were living specimens of the American Moon-moth (*Actias luna*), which is smaller than the Indian species mentioned at the commencement of this article, but like it, light green in colour, with a white crescent in the centre of each wing, and with the hind wings prolonged into "tails."

Turning my attention to the cases on the centre tables, the first to catch my eye was one containing specimens of the Silver-washed Fritillary (*Argynnis paphia*), from the New Forest, Hampshire. This is one of the finest species found

in England, and tolerably common in the South. It is deep tawny above, with black spots and streaks, but the hind wings are very handsome on the under surface, being green, streaked or "washed" with silver. There is a curious variety of the female found in the New Forest, in which the tawny red colour of the upper surface gives place to green; this variety is much prized by collectors.

Another British species was represented by some larvæ and pupæ of *Lycæna corydon*, the Chalk-Hill Blue Butterfly, which is common on chalk-cliffs and downs, these particular specimens coming from Dover, which is a great place for them. It is unique in colouration among British butterflies, being of a peculiar silvery greenish-blue, very beautiful and striking. In the same case were some pupæ and perfect insects of the Glanville Fritillary Butterfly (*Melitæa cinxia*), an extremely local species in this country, the principal resort being the Isle of Wight, from which these specimens came.

A second example of the genus *Telea* was shewn, in the shape of *T. promethea* (the Promethean Silk-moth.) This is a smaller and darker species than *T. polyphemus* exhibiting, in its general appearance a good deal of affinity with the Cecropian Silk-moth.

The family of *Sphingidæ* or Hawk-moths was represented by several European and one North American species. One of the most familiar to British collectors was the Spurge or Spotted Elephant Hawk-moth (*Deilephila euphorbiæ*), which is very pretty, with pink hind wings, barred with black. A member of a different genus was the Oak Hawk-moth (*Smerinthus quercus*), also from Europe, resembling in shape the Poplar Hawk-moth (*Sm. populi*), a common British species, but somewhat larger and paler than the latter. The North American species in another case belonged to this genus; it is a smaller moth, more like the English *Sm. ocellatus*, or Eyed Hawk-moth, but smaller. Its scientific name is *Sm. excæcatus*.

Two representatives of the genus *Sphinx* were the Convolvulus Hawk-moth (*S. convolvuli*), and the Pine Hawk-moth (*S. pinastri*.) The latter is a large greyish moth, a reputed British species, but very doubtful. The former is found in this country, but is far from being common.

I was pleased to see on one of the centre tables, a case containing some beetles belonging to the family *Cassididæ*. These were very curious, head, legs, and body being entirely hidden under a circular horny carapace, the tips of the antennæ and legs being just visible when the creature is walking, so



that it looks like some strange animal moving about with a shield on its back. That part of the carapace which is attached to the body is reddish-brown, while the edges are semi-transparent yellow. It comes from Ceylon. I say that I was glad to see it, because the order *Coleoptera* is very seldom represented at the Insect House, although many of its members are quite as beautiful and interesting as the *Lepidoptera*. I am certain that there must be many species which could be sent to this country in a living state, and collectors who would take the trouble to make the experiment, and forward a few to the Zoological Society of London, would have the satisfaction of knowing that they were conferring a benefit, both on the public, by increasing their knowledge of these insects, and on science, by facilitating their study, as a closer observation could be kept on them than is possible in their wild state, and many interesting and important facts relating to them would doubtless be discovered, which would otherwise have remained unknown.

I will conclude by recommending everyone who takes an interest in Natural History, and who has not visited this charming place, to do so on the first opportunity; I am positive that they will not regret it. Every day new changes are taking place, ova are hatching, larvæ changing into pupæ, and butterflies and moths emerging from their shells. At the time of my visit, almost all the cases which had living imagines in, had ova also, the larvæ from which will be nearly full-fed by the time this article appears.

W. H. ROSENBERG.

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## A NURSERY OF INSECTS.

For the breeding and rearing of insects, a building has been newly erected by the United States Department of Agriculture at Washington. Attached to it is a large glass conservatory, which serves as a sort of hothouse for the propagation of insects of ever so many species. Those selected for hatching out and bringing up are such as are of economic importance—that is to say, which are injurious or beneficial to useful plants. Like other animals, they require plenty of light, and the air is kept warm and moist all through the winter for the benefit of their health.

Along shelves in the conservatory are ranged a great number of glass receptacles of different sizes. Some of them are ordinary jelly glasses, while others are large jars, and yet

others are tubes open at one end only, and corked tightly with plugs of cotton. Each of these contains insects of some kind in process of development, though just now most of them are torpid, passing the winter in the chrysalis.

For example, in one jar are two or three sunflower heads which were infested by the larvæ of the beetle. The little worms have buried themselves in the sand with which the vessel is half filled, and next spring they will emerge as perfect beetles, ready to lay their eggs in fresh sunflowers.

By thus confining an insect where it can be watched its life history may be studied at leisure. All its transformations may be noted, the breeding being carried on with many species or generation after generation.

In a small jar half full of beans there are hundreds of bean-eating bugs which will continue to reproduce their kind so long as the food supply holds out.

Most of the jars are covered with muslin gauze, so as to admit the air while others are closed with glass tops to retain moisture.

In one jelly glass filled with little flies is an Irish potatoe riddled with holes by the maggot-like larvæ of the flies. A jar contains a few twigs infested with little worms which will come out after a while as beetles. In another receptacle, half full of sand, are some yucca pods lying about.

They have been abandoned by certain grubs, which have buried themselves in the sand, where they will undergo a transformation, emerging next spring at the blossoming time of the yucca in the shape of white moths. Yet another vessel holds half a dozen huge oak galls, three inches in diameter.

They are tumoury-like excrescences caused by small gnat-like insects, which sting the stem of the plant in hundreds of places close together, depositing an egg in each wound.

Thus irritated, the tree forms over the injured part an odd-looking growth, which serves to protect the offspring of the gall bag until they are ready to go out into the world and lay more eggs, perhaps on the stem which fostered them. Some galls are woolly and others are of brilliant colours. They have many commercial and medicinal uses.

Every day all of the glass receptacles are examined. Newly hatched insects, when wanted, are removed and killed, after which they are stuck on pins in boxes, arranged according to species, as books are arranged in a library. The boxes shaped like hollow books and opening in the same way, are similarly placed in rows on shelves, the back of each one labelled.



A catalogue serves as an index to the entire collection, every individual bug having a number. Up to date, only a small fraction of the insects in the world have been named and classified, it being estimated that no fewer than 10,000,000 species exist.

In one jar are a few pieces of bark honey-combed by woodborers. In this case, sawdust instead of sand is provided for the larvæ to bury themselves in, preliminary to coming out as flies. A jelly glass contains a little wheat flour, together with some beetles of a kind that devour stored grain and flour. These latter are readily bred, and can be watched throughout their development, from the egg to the larval form, and from the latter to the beetle.

In like manner wheat moths are propagated in a vessel with kernels of wheat, and "joint worms" are observed in the act of feeding upon stems of the wheat plant. Root-attacking bugs are propagated very simply in earth in pots, together with the growing plants whose roots they feed upon. To prevent them from escaping when they come out of the ground, glass jars are inverted over the plants and pots.

An important feature of this work is the study of parasites of the insects themselves. There is hardly any kind of bug which is not preyed upon by one or more other species. The best way to exterminate a pestiferous bug is often to introduce a hostile species to the region where the damage is being done. In this manner the Department of Agriculture has saved the orange-growing industry of California from being destroyed by the fluted scale insect from Australia, the lady bug which preys upon the scale.

The operations of such parasites are watched in the same jars with the insects fed upon, and thus knowledge is obtained of their habits which is likely to be most useful. In one jar are several chinch bugs together with some of the fungus which attacks them as a destructive disease.

This vegetable parasite is being extensively utilised over in Kansas, bugs affected with it being scattered broadcast to spread contagion among their kind. In other receptacles are combs of bumble bees and wasps, which are being kept for the purpose of developing and breeding insect parasites that have attacked the larvæ in the cells. Of course, the bumble bee is an animal of economic importance, inasmuch as it does a great deal of useful work in the fertilising of plants. Without its aid in this way there would be no red clover.

"CITIZEN, BROOKLYN."

# LIST OF BIRD SKINS FOR SALE at 225, High Holborn, London, W.C.

## RAMPHASTIDAE.

1	Ramphastos toco, Muhl.	..	16
2	" carinatus, Sw.	..	10
3	" brevicarinatus, Gould	..	10
4	" tocard, Viell.	..	10
5	" ambiguus, Sw.	..	8
6	" cuvieri, Wagl.	..	20
7	" culminatus, Gould	..	20
8	" ariel, Vig.	..	10
9	" vitellinus, Litht.	..	8
10	" vitellinus Var., trinitensis (Trinidad).	..	8
11	" dicolorus, L.	..	16
12	Andigena hypoglaucus, Gould	..	50
13	" laminirostris, Gould	..	40
14	" nigrirostris, Waterh.	..	12
15	" spilorhynchus, Gould	..	12
16	" bailloni, Vieill.	..	16
17	Pteroglossus wiedi, Sturm	..	8
18	" pluricinctus, Gould	..	10
19	" torquatus, Gmel.	..	5
20	" bitorquatus, Vig.	..	20
21	" flavirostris, Fras.	..	20
22	" viridis, L.	..	10
23	Selenidera maculirostris, Licht.	..	16
24	" reinwardti, Wagl.	..	16
25	" piperivora, L.	..	10
26	" spectabilis, Cass.	..	16
27	Aulacorampus sulcatus, Sw.	..	16
28	" erythrognathus, Gould	..	20
29	" derbianus, Gould	..	30
30	" whitelyanus, Salv.	..	50
31	" prasinus, Licht.	..	6
32	" albivittatus, Sclat.	..	5
33	" haematopygius, Gould	..	10
34	" caeruleicinctus, d'Orb.	..	50
35	" caeruleigularis, Gould.	..	20
36	" var veraguensis	..	20

## CALBULIDAE.

37	Urogalba paradisea, L.	..	8
38	Galbula viridis, Lath.	..	5
39	" ruficanda, Cuv.	..	5
40	" melanogenia Sclat	..	5
41	" tombacea Spix	..	10
42	" albirostris Lath	..	10
43	" chalcocephala Dev.	..	10
44	" leucogastra, Vieill	..	12
45	" chalthorax, Sclat.	..	12
46	Brachygalba fulviventeris, Sclat.	..	8
47	Jacamsralcyora tridactyla, Vieill,	..	10
48	Galbalcyrhynchus lencotis Des Murs	..	30
49	Jacamerops grandis and Var, Less.	..	12

## CAPITONIDAE.

50	Pogonorhynchus dubius, Gmel.	..	16
51	Melanobucco bidentatus, Shaw	..	16
52	" melanopterus, Gof.	..	16
53	" levillanti, Leach.	..	50
54	" abyssinicus, Lath.	..	20
55	" torquatus, Dum.	..	10
56	" vieilloti, Leach.	..	4
57	Tricholuema leucomelas, Shelley	..	10
58	Gymnobucco calvus, Gray	..	8

## Capitonidae—Continued.

59	Barbatula duchaillui, Cass.	..	10
60	" pusilla, Dum.	..	6
61	" lencolaema, Verr.	..	8
62	" subsulphurea Fras.	..	16
63	Caloramphus hayi, Gray.	..	5
64	" fuliginosus, Tem.	..	8
65	Megalaema marshallorum, Swinh.	..	6
66	Chotorhea chrysopogon, Tem.	..	8
67	" versicolor Raffl.	..	5
68	Cyanops asiatica Lath.	..	3
69	" henrici, Tem.	..	8
70	" franklini, Blyth	..	6
71	" ramsayi, Wald.	..	20
72	" mystacophanes, Tem.	..	6
73	" monticola, Sharpe	..	50
74	" caniceps, Fras.	..	5
75	" lineata, Vieill.	..	6
76	" viridis, Bodd.	..	5
77	Mesobucco duvauceli, Less.	..	4
78	Xantholaema haematocephala, Muhl.	..	3
79	" rosea, Dum.	..	6
80	Psilopogon pyrolophus, Muhl.	..	20
81	Trachyphonus margaritatus, Rupp.	..	16
82	" boehmi, Finch.	..	20
83	" purpuratus, Verr.	..	20
84	" goffini, Schlegel.	..	20
85	Capito maculicoronatus, Lawr.	..	16
86	" niger, Muhl.	..	5
87	" punctatus, Less.	..	4
88	" richardsoni, Gray	..	8
89	" granadensis, Shelley	..	4
90	" bourcierii, Laf.	..	4
91	" salvini, Shelley	..	16
92	Tetragonops frantzii, Sclat.	..	20

## BUCCONIDAE.

93	Bucco collaris, Lath.	..	6
94	" macrorhynchus, Gmel.	..	10
95	" dysoni, Sclat.	..	8
96	" swainsoni, Gray	..	16
97	" pectoralis, Gray	..	20
98	" tectus, Bodd.	..	8
99	" subtectus, Sclat.	..	10
100	" macrodactylus, Spix.	..	6
101	" ruficollis, Wagl.	..	16
102	" bicinctus, Gould	..	10
103	" tamatia, Gmel.	..	5
104	" maculatus, Gmel.	..	4
105	" radiatus, Sclat.	..	12
106	Malacoptila fusca, Gmel.	..	6
107	" torquata, Hahn	..	5
108	" panamensis, Laf.	..	5
109	" mystacalis, Sclat.	..	5
110	" costaricensis, Cab.	..	12
111	" inornata, Du Bus	..	5
112	Monacha nigra, Muhl.	..	6
113	" flavirostris, Strickl.	..	8
114	" morpheus, Hahn.	..	10
115	" pallescens, Cass.	..	10
116	" nigrifrons, Spix.	..	10
117	Chelidoptera tenebrosa, Pall.	..	4
118	" brasiliensis, Sclat.	..	4



# LIST OF BIRD SKINS FOR SALE at 225, High Holborn, London, W.C.

## CUCULIDAE.

119	Coccytes glandarius, L.	..	..	4
120	,, coromandus, L.	..	..	4
121	,, jacobinus, Bodd.	..	..	4
122	,, cafer, Licht.	..	..	5
123	Hierococcyx sparveriodes, Vig.	..	..	5
124	Cuculus micropterus, Gould	..	..	5
125	,, canorus, L.	..	..	3
126	,, pallidus, Lath.	..	..	5
127	Cacomantis flabelliformis, Lath.	..	..	4
128	,, merulinus, Scop.	..	..	5
129	,, virescens, Brugg.	..	..	5
130	,, cartaneiventris, Gould	..	..	20
131	,, passerinus, Vahl.	..	..	5
132	Chrysococcyx smaragdineus, Sw.	..	..	15
133	,, cupreus, Bodd.	..	..	6
134	Chalcococcyx xanthorhythus, Horsf.	..	..	10
135	,, meyeri, Salv.	..	..	20
136	,, basalls, Horsf.	..	..	4
137	,, lucidus, Gmel.	..	..	5
138	Coccyzus minor, Gmel.	..	..	5
139	,, melanocoryphus, Vieill.	..	..	8
140	,, americanus, L.	..	..	5
141	Urodynamys taitiensis, Sparm.	..	..	12
142	Eudynamys honorata, L.	..	..	4
143	,, cyanocephala, Lath.	..	..	5
144	,, melanorhyncha, Mull.	..	..	6
145	Scythrops novoe hollandie, Lath.	..	..	10
146	Centropss menebiki, Less.	..	..	6
147	,, nigricans, Salv.	..	..	16
148	,, phasianus, Lath.	..	..	6
149	,, sinensis, Steph.	..	..	6
150	,, borneensis, Bp.	..	..	8
151	,, toulou, Mull.	..	..	6
152	,, javanicus, Dum.	..	..	4
153	,, eurycercus, Hay.	..	..	6
154	,, seuegalensis, L.	..	..	5
155	,, superciliosus, Hempr.	..	..	10
156	,, celebensis, Quoy.	..	..	6
157	Saurothera dominicensis, Laf.	..	..	20
158	,, merlini, Dorb.	..	..	20
159	Piaya caryana, L.	..	..	4
160	,, mehleri, Bp.	..	..	4
161	,, melanogastra, Vieill.	..	..	8
162	,, minuta, Vieill.	..	..	8
163	Zanclostomus javanicus, Horsf.	..	..	8
164	Rhopodytes tristis, Less.	..	..	8
165	,, diardi, Less.	..	..	8
166	,, sumatranus, Raf.	..	..	6
167	Rhinortha chlorophea, Raf.	..	..	3
168	Rhamphococcyx calorhynchus, T.	..	..	8
169	Urococcyx erythrognaethus, Hartt.	..	..	5
170	Centmochares flavirostris, Sw.	..	..	6
171	,, intermedius, Sharpe	..	..	10
172	Dasylophus superciliosus, Cuv.	..	..	20
173	Coua caerulea, L.	..	..	8
174	,, reynaudi, Pucher	..	..	30
175	,, cristata, L.	..	..	8
176	,, ruficeps, Gray	..	..	16
177	,, coquereli, Grand	..	..	20
178	,, gigas, Bodd.	..	..	40
179	Geococcyx mexicanus, Gm.	..	..	16

## Cuculidae—Continued.

180	,, affinis, Hartl.	..	..	12
181	Diplopterus naevius, L.	..	..	4
182	Dromococcyx phasianellus, Spix.	..	..	30
183	,, pavoninus, Pelz.	..	..	4
184	Crotophaga major, Gmel.	..	..	6
185	,, ani, L.	..	..	4
186	,, sulcirostris, Sw.	..	..	4
187	Guira guira, Gmel.	..	..	10

## MUSOPHAGIDAE.

188	Turacus persa, Gray	..	..	8
189	,, meriani, Rupp.	..	..	16
190	,, leucolophus, Hengl.	..	..	30
191	Gallirex porphyreolophus, Vig.	..	..	30
192	Musophaga violacea, Isert.	..	..	12
193	Corythaeola cristata, Vieill.	..	..	30
194	Schizorhis africana, Lath.	..	..	8

## TROGONIDAE.

195	Pharomacrus mocinae, la Llave.	..	..	30
196	,, cortaricensis, Boucard	..	..	30
197	,, antisienensis, d'Orb	..	..	12
198	,, auriceps, Gould	..	..	12
199	,, pavoninus, Spix.	..	..	25
200	Tmetotrogon { rhodogaster, T. roseigaster, Vieill.	..	..	30
201	Prionotelus temnurus, T.	..	..	20
202	Trogon mexicanus, Sw.	..	..	10
203	,, personatus, Gould	..	..	5
204	,, collaris, Vieill.	..	..	10
205	,, laglaizei, Boucard	..	..	20
206	,, elegans, Gould	..	..	16
207	,, ambiguus, Gould	..	..	30
208	,, puella, Gould	..	..	5
209	,, auranteivenlris, Gould	..	..	30
210	,, atricollis, Vieill.	..	..	10
211	,, tenellus, Cab.	..	..	12
212	,, viridis, Briss.	..	..	8
213	,, chionurus, Sclat.	..	..	30
214	,, bairdi, Lawr.	..	..	30
215	,, citreolus, Gould	..	..	20
216	,, melanocephalus, Gould	..	..	8
217	,, caligatus, Gould	..	..	5
218	,, meridionalis, Sw.	..	..	6
219	,, ramonianus, Dev.	..	..	20
220	,, surucura, Vieill.	..	..	20
221	,, melanurus, Sw.	..	..	10
222	,, macrurus, Gould	..	..	16
223	,, masseua, Gould	..	..	12
224	,, elathratus, Salv.	..	..	16
225	Hapaloderma narina, Lev.	..	..	8
226	Harpactes diardi, T.	..	..	10
227	,, kasumba, Raf.	..	..	10
228	,, whiteheadi, Sharpe	..	..	100
229	,, erythrocephalus, Gould	..	..	30
230	,, duvauceli, T.	..	..	8
231	,, oreskios, T.	..	..	20

This List cancels all previous ones.

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# The Humming Bird

~ A QUARTERLY ~

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EDITED BY

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# The Humming Bird.

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## DESCRIPTION D'UNE ESPÈCE NOUVELLE DE COQUILLE DU JAPON DU GENRE ARCA PAR LE DOCTEUR FELIX JOUSSEAUME.

*Arca Boucardi, n.sp.*

Testa oblonga, valde inaequilateralis, postici oblique truncata superne emarginata, carina angulata ab umbone ad marginem decurrens, margo ventralis bisso oblongo hians, tenuissime radiatim granuloso-costata, supra carinam radiis 5 latioribus longitudinaliter striata, albido rufescens aut cinerea; epitesta nigra antice hirta postice tomentosa; umbones angulati curvati; arca ligamenti plano-concava, alba tenuissime striata, striis rectis imbricatis in quatuor partem sectans corio nigro oblecta.

Long, 57 à 60. Alt., 28 à 33. Diam. trans., 33 à 37 mill.

Cette coquille par sa taille et par sa forme se place à côté des *A. noce* et *navicularis*, elle est bombée au centre et atténuée à ses extrémités; la partie bombée, légèrement déformée au milieu a la forme d'un triangle dont l'un des angles est formé par le crochet des valves qui se contourne en volute en s'inclinant en dedans. L'extrémité antérieure beaucoup plus courte que la postérieure décrit une courbe arrondie qui se continue sans ligne de démarcation avec le bord inférieur. Elle s'arrête brusquement en haut où elle forme un angle droit avec le bord de la surface du ligament. L'extrémité postérieure qu'une arête saillante et anguleuse sépare de la partie médiane est plane et taillée en bec de flûte, son bord libre est obliquement incliné de haut en bas et d'avant en arrière. Sur la partie externe des valves dont la teinte est d'un gris maculé d'un rouge clair ferrugineux se dessinent des côtes rayonnantes qui portent des sommets, ces côtes qui vont en augmentant de grosseur et de nombre par l'addition de côtes intermédiaires sont très fines, serrées granuleuses et d'environ 70 sur la partie médiane de l'extrémité antérieure. Sur la partie plane de l'extrémité postérieure, les côtes sont beaucoup plus larges et plus espacées, au nombre de



cinq. Simples à leur naissance elles sont ensuite divisées en deux ou trois petits cordons superficiels par des stries longitudinales peu profondes ; dans les sillons qui les séparent il existe également de un à deux de ces petits cordons filiformes ; ce faisceau des stries longitudinales est découpé par de fines lamelles transversales. Le bord inférieur légèrement déprimé en face les sommets présente en cet endroit un écartement des valves qui laisse pour le passage du byssus, une étroite et longue ouverture baillante. Le bord supérieur presque aussi long et parallèle au précédent s'étale en une large surface excavée transversalement comme la tuile d'un toit et recouverte dans presque toute son étendue par une membrane noirâtre. Au dessus de cette membrane apparaît le test de la coquille qui est blanc et très finement strié. Ces stries très fines, nombreuses, droites et serrées suivent pour chaque valve la direction des bords de la surface sur laquelle elles se trouvent et viennent se joindre à angle obtus en formant une ligne qui s'étend d'un crochet à celui de la valve opposée. La face interne des valves blanches et rugueuses est encadrée par un étroit liseré brun qui couvre les bords, les impressions musculaires dont la postérieure est violacée sont irrégulières et couvertes d'un réseau arborescent de stries longitudinales. Les bords antérieur et inférieur sont finement dentés alors que le postérieur ne porte que quatre à cinq dents assez saillantes, larges et séparées par des sillons d'une largeur à peu près égale.

*Habitat.*—Mers du Japon.

Les trois coquilles que j'ai de cette espèce dont une seule est en parfait état, m'ont été données par mon excellent ami M. Adolphe Boucard à qui je dédie cette espèce. C'est un bien faible hommage de ma reconnaissance en rapport aux immenses services rendus à l'étude des sciences naturelles par un homme qui depuis sa plus tendre enfance leur a sacrifié tous les instants de sa vie.

Monsieur Boucard avait à peine douze ans lorsqu'il entreprit son premier voyage scientifique. Depuis cette époque jusqu'à l'âge de 45 ans, il a fait de nombreux voyages d'exploration, surtout en Amérique et soit par lui même ou par ses voyageurs il a répandu, fait connaître et augmenté d'espèces nombreuses les différents groupes de la faune américaine. Par ses relations avec les Naturalistes du monde entier, il a procuré aux travailleurs et aux savants de riches et importants sujets d'étude.

La faune du Japon, si intéressante par la forme inattendue des espèces qu'on y recontre et si instructive dans ses rapports avec celle des autres mers, n'était connue des malacologistes que par un très petit nombre d'espèces disséminées dans les collections ; aussi malgré les importantes monographies qu'on avait publié à ce sujet, était il impossible de se faire une idée exacte de cette faune et d'en tirer des conséquences précises.

Pour combler cette lacune, M. Boucard s'est fait envoyer du Japon un très grand nombre d'espèces et d'individus qu'il a livrés aussitôt aux malacologistes et aux collectionneurs.

Ce qu'il m'a envoyé personnellement et la collection déjà importante que je possédais d'espèces du Japon me permet de donner un aperçu général sur la corrélation de cette faune avec celles de localités si éloignées ; que l'on est surpris d'y rencontrer les mêmes espèces.

Plus de mille espèces de la faune malacologique du Japon nous sont actuellement connues. Les unes qui n'ont pas encore été rencontrées ailleurs semblent confinées dans la mer de Chine ; d'autres se retrouvent dans l'Océan arctique et les points les plus rapprochés de l'Océan pacifique, mais c'est dans la Mer rouge que l'on rencontre le plus d'espèces de la faune du Japon, et fait extraordinaire l'on trouve des espèces du Japon dans la Méditerranée, alors qu'on ne rencontre aucune espèce, commune entre la faune de la Méditerranée et celle de la Mer Rouge.

Les espèces spéciales au Japon et dont quelques unes vivent également sur les côtes de Chine ont des formes si gracieuses et si bizarres qu'elles ont du servir de modèle à l'art décoratif de l'extrême orient. Parmi ces espèces je citerai *Fusus pagonus*, *Ranella perca*, *Murex falcatus*, *Thaicheria mirabilis*, *Cancellaria nodulifera*, et les espèces du genre *Latiaxis* et d'autres de formes moins excentriques tel que les espèces des genres *Siphonalia*, *Volutharpa turcica*, le *Murex troscheli*, la *Nassaria Japonica*, *Eburna Japonica*, etc., qui semblent également porter en elles un cachet local.

Les espèces du Japon que l'on rencontre dans la Mer rouge, sont si nombreuses que je ne signalerai ici que celles qui sont connues de tous les malacologistes et sur l'identité desquelles il ne peut subsister aucun doute ; tels que, *Murex adustus*, *rota* ; *Bucinum proteus*, *undatum*, *Triton pileare*, *aquatilis*, *tritoni* ; *Ranella granifera*, *Phos senticosus* ; *Purpura rudolphi*, *mancinella* ; *Rapana bulbosa* ; *Coralliophilla monodonta* ; *Leptoconchus striatus* ; *Mitra ferruginea*, *amphorella*,



crenulata; *Columbella scripta*, *flava*, *mendicaria*; *Dolium perdix*, *pomum*; *Ficula reticulata*; *Natica toeniata*, *simioe*, *melanostoma*, *papillo*; *Cassis rufa*, *vibex*, *Terebra maculata*, *subulata*; *Conus ebraeus*, *textile*; *Strombus lustruanus*, *gibberulus*; *Pterocera bryonia*, *lambis*, *Terrebellum punctatum*; *Cypraea isabella*, *carneola*, *felina*, *cribraria*, *fimbriata*, *macula*, *reticula*, *arabica*, *mauritiana*, *moneta*, *annulus*, *vitellus*, *lynx*, *erosa*, *caurica*, *helvola*, *staphylea*, *lienardi*; *Ovula ovum*; *Cerithium columna*, *aluco*, *kockii*; *Nerita albicilla*; *Phasianella variegata*; *Umbonium vestaria*; *Cardinalia*, *virgata*; *Stomatia phrynotis*; *Gena lutea*; *Teinotis asinina*; *Macrochisma macrochisma*; *Hydatina physis*, *Bulla ampulla*; *Alys naticum*, *Gastrochoena grandis*; *Aspergyllum vaginiferum*; *Merope aegyptiaca*, *Roeta pellucida*; *Coecella chinensis*; *Psammobia occidens*, *Venus reticulata*, *marica*; *Tivella damaoides*, *Venerupis macrophylla*, *Coralliophaga coralliophaga*; *Tridacna squamosa*, *Modiolaria cumingiana*; *Vulsella spongiarium*, *Meleagrina margaritifformis*; *Malleus regula*, *Pinna bicolor*, *saccata*; *Arca navicularis*, *Cucullaea*, *concamerata*, etc.

Toutes ces espèces, et un nombre bien plus grand encore que je n'ai pas signalées, au lieu de prendre le chemin le plus court pour se rendre de l'une à l'autre de ces deux localités se sont tracées un itinéraire dont je vais indiquer les principales stations:—les Philippines, la Nouvelle Calédonie, et l'île Maurice où l'on retrouve toutes ces espèces associées à des espèces provenant des autres localités environnantes. Ce n'est qu'isolées ou en très petit nombre que l'on constate la présence des espèces que nous venons d'énumérer dans l'immense espace compris entre les côtes est et sud de l'Asie et la courbe qui relie la Mer rouge au Japon en passant par Maurice, la Nouvelle Calédonie et les Philippines. Aussi pourrait-on les considérer comme des rejetons d'individus qui se seraient égarés. Je ne doute pas que ces espèces suivent dans cette migration la direction des courants sous marins et que ce soit eux qui se sont chargés de leur transport d'une localité à une autre.

Des espèces communes à la faune du Japon et de la Méditerranée, nous ne connaissons actuellement que les suivantes:—

*Triton nodiferum*, *Parthenopes lampas*; *Cassis saburon*; *Mya arenaria*, *truncata*; *Tapes decussata*; *anomia ehippium*; *Terebratulina caput serpentis*.

La présence des mêmes espèces dans deux localités aussi

éloignées est si peu concevable que les auteurs qui se sont occupés les premiers de la faune malacologique du Japon, leur ont donné des noms différents. Quoique peu nombreuses, ces espèces confinées dans deux localités que sépare dans toute sa largeur le continent asiatique et dont on ne rencontre aucune trace sur l'immense parcours des mers qui les relient, sont les témoins irrécusables du prolongement de l'Océan indien jusqu'à la Méditerranée à travers la partie septentrionale de l'Asie: car il est inadmissible qu'une cause accidentelle ait présidé au transport, d'une de ces localités à l'autre, d'espèces de taille aussi grande et de genres aussi différents et aussi éloignés.

L'on pourra voir par ce court aperçu, de quel intérêt serait pour la science une étude approfondie de la faune malacologique du Japon, et combien les efforts tentés à ce sujet par M. Boucard sont louables et méritoires.

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## THE USE OF SALT FOR AGRICULTURAL PURPOSES.

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Salt can be considered as of the utmost importance to agriculture, but in dry and light soil it is not sufficient. Two hundredweight of salt should be applied with each cartload of manure. The best time to use it is just before the land is broken up, when it gets ploughed in, and thoroughly incorporated with the soil. Five or six hundredweight per acre may be used with great advantage on light and friable soil, but upon heavy wet land, it should be used more moderately. It is good for all produce. It strengthens the straw and increases the yeild on crops of wheat, barley, oats, and such like. It can be also used with the greatest advantage in the orchard, for nearly all classes of vegetables and fruits. It protects all of them from the attacks of the mildew.

A friend of mine, who lives near Paris, has succeeded in obtaining splendid crops of cherries, pears, apples, peaches, grapes, and other fruits, by using salt mixed with manure. Before



he knew of this, his beautiful and extensive garden was so attacked by mildew that he could scarcely raise any fruit at all, and this of a very poor description. After making use of salt, about four ounces for each vine, and as many pounds for each fruit tree, he had the satisfaction of seeing the mildew disappear completely, and now he gathers such a quantity of good fruit that he scarcely knows what to do with it.

Here, where I am living now, in the Isle of Wight, the farmers have the same habit as those of Normandy and Brittany, of gathering the varec on the shore, and to cart and spread it in their fields in large quantities, and I am told that the results are very satisfactory. Although I am quite certain that the varec by itself is a good sort of manure, I attribute, more especially, the success attending their operations to the salt which they carry with the varec, although I am afraid that they have never found it out. Therefore SALT must be considered as one of the best remedies against the attacks of the mildew, and as a great factor in obtaining good crops, and it ought to be extensively used by all, in agricultural pursuits.

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## ARE ANTS OF AID TO FRUIT-GROWERS ?

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Can the ant be enlisted into the service of man and be utilised for a beneficent purpose by the fruit-grower ? In this country the ant is looked upon as a pest by the horticulturist and gardener that must either be poisoned with arsenic, suffocated with tobacco smoke, or drowned in boiling water ; but in spite of these stereotyped ideas, there is just the possibility of indiscriminately destroying an insect which, though insignificant in stature, may, when its true value be determined, prove one of the most useful aids in the orchard that can be imagined.

Though generally regarded as an unmitigated nuisance, they may, when their habits are more fully known, be found to be useful servants of the farmer and gardener.

For instance, many of the leading orchardists of Southern Germany and Northern Italy hold the black ant in high esteem, and take measures to promote their increase.

They establish ant hills in their orchards, and leave the police service of their fruit trees entirely to their tiny colonists, which pass all their time in climbing up the stems of the

fruit trees, cleansing the boughs and leaves of malefactors, natural as well as embryonic, and descend laden with spoils to the ground, where they comfortably or prudently store away their booty.

They never meddle with sound fruit, but only invade such apples, pears and plums as have already been penetrated by the insects, in pursuit of which they penetrate to the very heart of the fruit. Nowhere else in the orchard are the apple and pear trees so free from insect ravages and blight as in the immediate neighbourhood of a large ant hill, five or six years old.

#### HOW THEY PROTECT THE TREES BY DESTROYING THEIR BROTHER INSECTS.

In China, even since the sixteenth century, and probably earlier, ants have been used to protect fruit trees from the ravages of insect pests. In the province of Canton, the orange trees are injured by certain worms, and the orchardists rid themselves of the pests by importing ants from the hill country.

Two species of ants—the red and yellow, which build their nests suspended from the branches of trees—are used for this purpose. The ants are placed in the upper branches of the tree, where they build their nests; bamboo rods are stretched from one to another all through the orchard, so as to give the ants free access to all the trees.

They are said to be very effectual in protecting the trees. The valuable aid afforded by ants in protecting orange trees from insect ravages has been observed in Florida. One year, when very few of the groves near Jacksonville bore much fruit, on account of insect ravages, one planter secured a large crop, and attributed his success to having used ants as insect destroyers, having induced them to frequent his trees by trying them with a strong solution of syrup and water.

The solution dried, leaving a saccharine substance adhering to the leaves, twigs, and branches of the trees, in seeking which the ants killed the insects which infected the trees and destroyed the blossoms in the bud, or the young fruit after it had set.

Ants have been observed to destroy canker worms. Whether this is a frequent occurrence or not, it is a matter well worth the attention of those orchardists who have suffered



much from the ravages of that pest. In this connection here are the observations made by a specialist. He said:—

“It is new to us that ants are great destroyers of the canker worms, and probably other worms or insects of the smaller varieties. We watched with great interest the work of a large colony of black ants which attacked the canker worms on an elm tree in our grounds, and were delighted with the nature and result of their labours.

“Two processions of the ants were moving down, each bringing with it a canker worm, which it held fast in its mandibles, grasping the worm firmly in the centre of the body.

“Although the prey was nearly the size of the destroyer, the plucky little ant ran down the tree in a lively way, deposited its body in its nest in the ground, and instantly returned for further slaughter.

“There were at one time as many as forty coming down the tree, each bringing its victim, and doing the work with apparent ease. Extending our observation we noticed that the ant ran up the trunk and out on the limb, and from thence on to the leaves of the tree where the filthy worm was at work, and, seizing him with a strong grip about the centre of the body, turned about with the squirming worm, and retraced his steps.

“The worm was dead by the time the ant reached the ground. If this move of the ant is common, they must prove valuable friends to the farmers and fruit raisers, and should be protected in every way possible. We do not believe that the birds that prey upon worms will do the work in a week in our orchards which these ants were doing in an hour.”

Worms have also been known to have been destroyed by ants. A gentleman, a few years since, gave the following account of what he saw:—

“During the last two weeks of July I was cursed with an invasion of the worms, and after I had recovered from my first chargin at the prospect, I began to enjoy the antagonisms between the ants and the worms.

“If the ant attacking the worm was the large black ant, one usually engaged in the contest, the ant usually took the worm by the nape of the neck, and the struggle was between the strength of the ant and that of the worm. The bite of the ant did not seem to kill the worm at once, but the fight sometimes lasted fifteen minutes, always resulting in the victory of the ant.

"It was then dragged to the ant's quarters. If the attack was made by the small red ants, two usually took the work. One made the attack, but would soon require assistance. Sometimes the ant would go away and seek help, and upon returning could find no worm, and thus the worm would escape."

The question is an important one to fruit growers, especially as since the unjustifiable and wanton destruction of birds by farmers, the ravages of insects pests during the past few years have increased in the most alarming manner. If the ant can be utilized in the manner we suggest, there will be no need for the introduction of poisonous solutions into English orchards.—*Horticultural Times*.

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## BANANA CULTURE.

The banana, we learn from a United States official Report, is so popular a fruit in that country, that during August and September seventy-eight thousand tons were imported, while, on the other hand, its culture is extending with such rapidity, that before long the entire home demand will be met by Florida, Mississippi, and other suitable areas of the Republic. If true—which we doubt—this will not be good news for the grape dealers whose wares it is displacing, or for our West India Colonies from which the supplies of this wholesome fruit are at present obtained. Nor is it altogether for the benefit of the United States; for when the lazy negro learns that with the minimum of labour the maximum of food can be grown on a mere patch of ground, it will be vain to expect him to toil at such uncertain crops as cotton or tobacco, far less at "raising" wheat which is saleable in Liverpool for thirty shillings the quarter, and in the land where it is grown brings a great deal less. All he has to do is to betake himself to the hot, steaming country on the Lower Mississippi, plant a banana patch, and return to a state of pristine savagery. In short, the introduction of the banana is destined to do as much harm in the old slave lands as the introduction of the potato did in Ireland—an easily reared food plant, highly conducive to early marriages, large families, and all abounding sloth.

But the banana—and under this head we include the plantain, which is really only one of many varieties—has infinitely greater possibilities than the potato. It is, in the



first place, far more nutritious and a hundredfold more fruitful. At the best the Irish tuber yields only food, and, by a process with which the excise are not supposed to be acquainted, an uncommonly poor description of very ardent spirit. But the banana is excellent food, and, with a little manipulation, gives a beverage largely consumed over the whole of Central Africa. It is capable of providing shelter quite sufficient for the wants of the dwellers in the sun lands, and its fibre is, for the purpose of weaving, preferable to cotton or flax. An Indian—say in Central America—or a negro in Uganda, may, when he plants an acre of bananas, dismiss from his mind any anxiety as to the future. It is impossible to imagine a crop more easily reaped. With a little care the plants may be made to bear practically all the year round, and as a bunch will weigh from twenty to eighty pounds, it is clear that to lay in stores for a frugal household (to whom a yard of cotton apiece is an ample wardrobe) is a briefer and easier task than even digging a bucket of potatoes or husking a bushel of maize. And there is no comparing the productive powers of the two vegetables. An imperial acre of bananas is estimated to produce forty-four times more by weight than the potato, and one hundred and thirty five more than wheat. Unripe, the banana is excellent boiled as a vegetable, or, as all who have visited the West Indies must recall, sliced and fried as fritters for breakfast. As a fully ripe fruit most of us know it, even in the immature condition in which it reaches the English markets from the Azores and other Southern countries. Roasted and flavoured with the juice of oranges and lemons, and sugar, and made into a kind of *compote*, it is excellent; and in Monbuttu, in Central Africa—and elsewhere—the fruit is dried, in which condition it can be preserved for months, or, if spices and sugar are added, it is formed into a paste quite capable of being kept good for years. The mealier ones, by being oven or sun dried, and then pounded, can be readily converted into a nutritious flour, which contains not only starch, but protein, or flesh forming material.

But the food-yielding properties of the banana do not end here. There is a wild species—the “*Ensete*”—of Abyssinia, the fruit of which is dry and inedible, though the base of the flower stalk can be cooked and eaten. When soft, like a turnip well cooked and flavoured with butter or milk. Bruce declared it to be “the best of all food—wholesome, nourishing, and easily digested,” an eulogy which must, however, be discounted by the fact that the Scottish traveller

himself had the credit of discovering this vegetable resource of a rather resourceless land. Finally, the "merissa" beer, which is drunk in prodigious quantities all over the Upper Nile and Lake country in Africa, is the fermented juice of the banana. Even the Mahdi has had to wink at its consumption, while a recent traveller doubts whether he ever saw as many tipsy people as in a certain district in Africa. The banana will even yield medicine, for the juice of the stem—the spongy pith of which is also highly nutritious—is a useful astringent. Taken internally, the leaves are said to be valuable against dropsy, and are often used externally in cases of scalds and ulcers. The stems are, in Tonquin, burned, and the ashes employed for purifying sugar, while all parts of the plant abound in a fibre which has never been systematically utilised except in small quantities. In Dacca, the country people make from it the string of the bow with which they tease cotton, and in some of the Indian islands a cloth is woven from the banana thread which is not much inferior to that made from the Abaca—a banana which yields the well-known Manilla hemp. The top of the banana stems, if boiled, is an excellent pot herb, and the large fronds are employed not only for packing and as plates, but in roofing the native huts. In brief, the United States, by teaching the negroes the manifold virtues of a plant known to their countrymen in Africa, are doing them and the country at large a questionable benefit. We doubt, however, whether, even with the protective tariff, the warmest portions of the United States will ever be able to compete with the West Indies in rearing a fruit which flourishes in such perfection all over Jamaica and the Antilles generally. Central Africa, too, is becoming one vast banana plantation. For miles and miles nothing else is seen; even the Indians of Central and South America have not taken more kindly to it. Captain Lugard describes the fruit as the national meat and drink; and Emin Pacha tells us that, though the plantations are well kept, the only manure they receive is bunches of grass allowed to rot around the base of each plant. In that part of Africa there are three kinds of bananas—one with insipid fruit, used only for making beer; a second sweet, with white pulp, which is both eaten and employed in distilling "wines;" and a third, used entirely for eating, though generally cooked with meat, in the green state. In Monbuttu there are ten different varieties, one of them bearing fruit eight to ten inches long, and thick in proportion, though generally consumed in a dried condition.



In all these lands the plants grow with great ease, in spite of the fact that they receive the least amount of care. To set out a new plantation is the simplest of operations. The stems formed by the base of the leaves, are annual, and usually die down after the exhaustive process of fruiting has been completed, new ones being produced from buds or suckers in the root stock, which is perennial. It is by planting these buds that the banana is propagated, and fresh plantations made. And so exceedingly simple is this form of agriculture, that the plant generally bears ripe fruit within ten months of the offsets being put into the ground. As is the case with many other useful plants, it is now difficult to trace the original country of the banana. Botanical geography, however, forbids the acceptance of the belief that bananas where the fruits called "grapes" which the spies of Moses brought from the valley of Eschol, and it is about as unlikely to have been the "forbidden fruit" as the Seychelles cocoa-nut was, according to the belief of General Gordon. It is supposed to be a native of India, and in that Empire it still forms a large part of the people's food in the area where it grows best, and bunches of it figure at weddings as symbols of plenty. But it is doubtful whether it was introduced into Africa from any part of Asia. We know that it is not indigenous to Egypt. Nevertheless, on some ancient Egyptian sculptures we see representations of Isis with ears of corn and the foliage of the plant in question, and carvings have been met with which represent the hippopotamus destroying the banana. This species Bruce took to be the Abyssinian one, the hippopotamus typifying the Nile, the inundations of which have at times washed away not only the wheat, but also the "Ensete" banana, the nutritious stems of which were to supply its place. It is also the recorded opinion of Emin Pacha that all the varieties of Central Africa bananas are cultivated forms of the inedible Abyssinian species, which have gradually spread southward, or have been carried by the Gallas or other northern tribes on the invading expeditions which have given Wahumu Kings to so many of the countries in the vicinity of the Great Lakes. Be this as it may—and the cattle and fowls which are found in every African village are equal mysteries—it is certain that from a time beyond which the memory of man runneth not the banana has been the fruit of a large portion of Africa just as it is of a large area of South America, and bids fair to become the staple produce of the hotter parts of the United States.

## STRANGE PHENOMENON IN CALIFORNIA.

FORMATION OF AN INLAND SEA.

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A geological phenomenon of considerable importance has appeared in San Diego County, in the extreme south of California. It consists in the almost sudden formation of an inland sea. On Saturday a trickling of water was observed to damp the ground around the Salton Salt Works, and now it has expanded into a lake ten miles square, and from three to eight feet deep. Then at Indian Wells, sixty miles south of Salton, another new sea, forty miles square and from three to five feet deep, has been formed. It appears possible that these bodies of water may unite, and form a lake fifty miles long and four hundred feet deep. Indian runners have been employed to go round the rising waters, and as they have failed to find any surface inlet, a boat has been provisioned for a week, and started to explore and try to discover the connection with the Colorado River, whence the water is believed to come, whether above ground or by a subterranean communication. The so-called Colorado Desert, lying to the east of the new lake, resembles the bed of a dead sea. It has an area of three thousand miles, and lies two hundred and seventy feet below the ocean level. Shells and other marine deposits abound. Engineers have often planned to make this area fertile by irrigation, after the manner of the Valley of the Nile, which would add two million acres to the State, but all their efforts so far have been in vain. The Southern Pacific Railway crosses the Colorado River at several places 160 feet above the ocean. For twelve miles near Yuma (Arizona City) only a loose, water-sodden ridge, nine feet high and a mile wide, separates the district from the Salton Sink. All the district appears now to be reverting to the condition described in Indian tradition. The stoppage of several artesian wells conflicts with the theory of a subterranean ocean, having a current running inland.



## WASTE PRODUCTS MADE USEFUL.

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In the *North American Review* for November there is a very interesting article by Lord Playfair under the above title, says *The West Indian and Commercial Advertiser*, from which we take the following extract:—

## THE UTILIZATION OF RATS.

Of all living things rats seem to be among the most repulsive; and when dead what can be their use? But even they are the subjects of production in industrial arts. In Paris there is a pond surrounded by walls into which all dead carcasses are thrown. A large colony of rats has been introduced from the catacombs. The rats are most useful in clearing the flesh from the bones, leaving a clean-polished skeleton fitted for the makers of phosphorous. At the base of the wall numerous shallow holes are scooped out just sufficient to contain the body of the rats, but not of their tails. Every three months a great *battue* takes place, during which the terrified rats run into the holes. Persons go round and catching the extended tails, pitch the rats into bags, and they are killed at leisure. Then begins manufacture. The fur is valuable and finds a ready sale. The skins make a superior glove—the *gant de rat*—and are especially used for the thumbs of kid gloves because the skin of the rat is strong and elastic. The thigh bones were formerly valued as tooth picks for clubs but are now out of fashion; while the tendons and bones are boiled up to make the gelatine wrappers for bonbons.

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HOW TO PRESERVE ANIMALS.

In *Scientific American*, Mr. Wiese gives the following receipt for the preservation of bodies in their natural form and colour:—"Dissolve 600 grammes hyposulfit of soda in five quarts of water, and seventy-five grammes of chlorine of ammonium in 250 grammes of water. Mix both solutions, and add six cuarts of spirit of wine. Put all bodies of animals in this liquid, and they will keep their form and colours during an unlimited period.

## THE ENGLISH GRASS SNAKE.

Snakes have always had a peculiar fascination for me. When at school I generally used to carry one or two in my jacket pocket, from which they would often escape, causing the greatest surprise and consternation among my friends. I remember one fellow, who although very tame, was an adept at seizing the slightest opportunity of obtaining his liberty. He would be lost for weeks, and then turn up in a neighbouring house, perhaps five or six doors away. The whole street used to look for his more or less welcome visits, and when he did arrive, would send for me to take him away.

I have found the grass snake (*Tropidonotus natrix*), to be rather common in the country lying to the north of London, and have even caught one within the four mile radius from Charing Cross. That, however, was eleven years ago. The equipment of a snake hunter is very simple, consisting of a linen bag to contain his captures, or it may be as well to take two, so as to be able to separate very young snakes from the others. The only other article required is a stick, forked at the end like a Y; it should be about the length of an ordinary walking stick.

On meeting a snake, you thrust at it with the forked end of the stick, in such a way that a prong enters the ground on each side of its body, pinning the reptile to the earth, when one can examine it in safety in order to see whether it is a viper or not. Of course, care must be taken not to use too much force, or the snake will be injured, and to further lessen the danger of this it is a good plan to attach a strip of india-rubber to the ends of the prongs; this will deaden the force of the blow.

For the benefit of the novice I will mention a few of the most important characteristics which distinguish the innocuous grass snake from the poisonous viper. By far the most striking difference, one which can be seen at a glance, is the broad yellow mark or collar behind the head of the former, which is absent in the viper. This collar is very deep in colour in young specimens, becoming paler with age, until it is almost white in very old snakes. There is a second collar, which is black, behind the yellow one. This mark is quite sufficient of itself to distinguish the two species, and can easily be seen when the snake is pinned to the earth by the forked stick.

The viper has a broad zigzag stripe down the back, while



the common snake has only a few black spots; in the latter also, the scales have a keel or ridge, those of the viper being smooth. The general appearance of the two reptiles is very different, the viper being comparatively short and stumpy, with the base of the head much wider than that of its non-poisonous relative. The latter is perfectly harmless, and, although I have caught numbers of them, I have never known one to even attempt to bite. In any case their teeth are much too small to do any harm, and can scarcely be felt with the finger. Needless to say, their tongue, which they constantly protrude, is quite incapable of hurting anyone. I was once bitten, however, by a snake belonging to the same genus, but of a different species (*Tropidonotus tesselatus*), from the south of Europe. He was a most savage, intractable fellow, always hissing loudly whenever approached. After he had been in my possession some little time, he managed to make his escape, and, not being heard of for two or three weeks, was given up as lost. One day a gentleman living three or four doors round the corner came to tell me that there was a snake on a ledge at the back of his house, and to ask if it belonged to me. The information gave me great pleasure, which, strangely enough, did not appear to be shared by the occupier of the house. I quickly went with him, when he pointed out the snake, which was coiled up and basking in the sun. I got on the ledge and seized him, when to my great surprise he bit me three times in rapid succession, each bite leaving a double row of little holes in the fleshy part of my hand. The punctures bled freely, but knowing that the snake was not venomous I did not feel any alarm, although I thought it advisable to have the wounds touched with caustic, as the reptile's mouth might not have been clean. This snake had much stronger teeth than the English species; I do not believe that those of the latter would draw blood, even if they tried to bite, which, as I said before, I have never known them to do. There is another European species, the Viperine snake (*T. viperinus*), which is very interesting, and becomes very tame. It is smaller than *T. natrix*, and, as its name implies, bears a considerable resemblance in shape to a viper, but is perfectly harmless.

Now a few words regarding the best localities for meeting with the Grass Snake. They are essentially water-lovers, and therefore the vicinity of ponds and ditches is the best place to explore for them. They are probably more common in damp, clayey parts of the country than on sandy heaths and commons.

The viper, on the contrary, is usually found in the latter localities. All my captures have been made in situations of the former description, where there was little or no fear of meeting with the viper, so that I have usually dispensed with the forked stick, and have seized the reptiles with my hands. This is a surer means of capture, as, if the first thrust with the stick misses, the snake will probably escape. We will suppose that the snake-hunter has arrived at a likely spot, such as a meadow with a hedge and ditch running round it, and with a pond in it. He should slowly and noiselessly walk by the side of the ditch, carefully examining the banks as he goes, for that is where the snakes usually lie, basking in the sun. He is more likely to hear them before he sees them, as they are very quick to take alarm, and glide away under the hedge or down disused burrows of rabbits and field-mice with incredible swiftness.

If, however, they have just had a meal they are very sluggish, even remaining coiled up until seized. When captured in this condition they often disgorge their prey, which generally consists of frogs; these they swallow alive, and I have often caught snakes which had just swallowed their victims, the latter on being disgorged, hopping about as though nothing had happened.

If there is water in the ditch, the collector should keep an eye on that also, as snakes swim very rapidly and without noise. When one is captured, it should be transferred to the linen bag, which should then be carefully and strongly tied; if the day is very hot, it is advisable to occasionally dip the bag in water whenever a pond is passed. After the hedge-banks have been thoroughly explored and examined, attention should be turned to the pond. This latter should be very cautiously approached, or the snakes may dive into the water, under which they can remain for a considerable time. It took me about half-an-hour one day last summer to capture a beautiful little snake six or seven inches long. It swam across the pond twice, finally climbing into the branches of a bush which overhung the water. Here was a dilemma. If I had made the least sound it would have glided into the water, so I had to crawl on hands and knees, moving scarcely an inch at a time, until within reach of the bush, when I seized the reptile just as he made a dart for the water, nearly diving head-first into the latter myself.

It sometimes happens that two or more snakes are found together; in that case things get exciting. On one occasion



I was walking by a hedgerow in company with a friend, who was *not* a snake-lover, when I saw what seemed to be a most enormous snake on the bank ; on catching it, it turned out to be not one, but three snakes, two of which were fully four feet long. Not having come out with the intention of snake-hunting, I had no bag, but as I had caught two small snakes just before, I had then improvised a bag with a pocket handkerchief. But it was quite another thing to get the last three into it, for it was no easy matter to hold the struggling reptiles in one hand and to untie the handkerchief with the other. My friend had speedily retreated to a safe distance as soon as he saw the wriggling, hissing cluster of snakes in my hand, and it was with the greatest difficulty that I persuaded him to help me make them secure. But when the handkerchief was untied, the two snakes already in it darted out in different directions and almost escaped ; a most exciting five minutes followed, for as soon as I got one into the bag another would get out, but eventually they were all safely tied up.

When a snake is first captured it is apt to frighten a novice, for it hisses and struggles in a most alarming manner. A favourite trick of theirs is to sham death ; when they find that they cannot escape from their captor, they will lie limp and motionless in his hands, with the tongue hanging out and the mouth open. But if laid upon the ground they will instantly recover, and dart off into the undergrowth.

The best cage for snakes is undoubtedly a fern-case, the larger the better ; but still, almost any kind of box with a glass top or front, and plenty of ventilation, will answer the purpose. Everything should be made as natural as possible with growing grass, ferns, &c. A receptacle for water should be placed in the cage, for the grass snake dearly loves that element, and will lie in it for hours together. A piece of virgin cork is a good thing to put in for the reptile to hide under, and when it wants to change its skin, will be useful for it to rub against. Their favourite food consists of young frogs, or, in the case of large snakes, even full-grown ones ; they must be given to them alive, for they will not touch them when dead. I have never known them to eat toads in captivity, although I once caught a snake which shortly afterwards disgorged a young toad, which was apparently none the worse for its adventure. But as toads secrete an acrid fluid, which causes most animals to drop them as soon as taken in the mouth, the above must have been a very unusual occurrence.

No alarm need be felt if a snake refuses to eat, for they can go without food for a wonderful length of time, but they must always have clean water in the cage. One objection to them is their excessively unpleasant odour when first caught, but they lose this after a few days of captivity, especially if handled frequently. At first they are very nervous, hissing and struggling whenever taken up, but they get tame in an incredibly short space of time. Particular care should be taken to keep their cage securely fastened, as they are very quick to perceive the least opportunity of escape, and are by no means easy to discover when they once get loose in a house. Very young snakes should not be placed with larger ones, as the latter will not hesitate to devour them.

Those who do not feel that antipathy to these reptiles, which is so common among people who are not properly acquainted with them, will find the time and trouble spent on them amply repaid, especially if they go into the country and study their habits in a state of nature as well as in captivity.

W. F. H. ROSENBERG.

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## THE GREAT LAKES.

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### A MYSTERY UNVEILED.

"Discovered," in a scientific sense, the Great Lakes of Africa undoubtedly have been during the latter half of this century; "discovered" in the popular acceptance of the term they certainly were more than four centuries since. If we turn to the old maps of Africa, dating back 400 years, a surprise will await us. For there, rudely drawn no doubt, and not very correctly placed, though more accurately than was the greater portion of Africa until recently, are large inland waters which it is not difficult to recognise as the Victoria Nyanza, Tanganyika, or Albert Nyanza, perhaps—and possibly also the Nyassa lake. This fact is very clearly brought out in the second volume of that very admirable work, "The Story of Africa and its Explorers," by Robert Brown, M.A., published, with copious maps and illustrations, by Messrs. Cassell & Company.

### A STRANGE LAND.

Aristotle and Ptolemy both alluded to the African lakes, and the Portuguese and Arabs also brought vague rumours from the interior of the existence of three great inland seas. But it was reserved for Richard Burton to be the first white man to



literally set eyes upon Lake Tanganyika and Mr. Brown gives a vivid picture of the watery wilderness upon which the intrepid traveller gazed, after a journey of terrible hardships. Crocodiles swarmed everywhere in that district, and among the endless superstitions of the natives were charms to prevent these reptiles from snatching an unwary bather; while hippopotami were numerous, especially at the mouths of the rivers that feed the lake. Two snakes, the great siluris, and many other fishes and molluscs inhabited the waters. Long-horned buffaloes peeped in wonder at the intruders in their leafy haunts; antelopes were often sighted, and the fresh tracks of elephants were more numerous than they are now, for the eagerness of the ivory-hunters has gone far to exterminate them.

#### UGANDA.

A sheik, whom Burton and Speke encountered on the shores of Lake Tanganyika, gave them a graphic description of the empire of Uganda, of which we hear so much nowadays. Burton was too ill to accompany an expedition formed to penetrate further into the interior, so Speke set off by himself. On July 30th, 1858, Speke sighted Victoria Nyanza. "It was early morning," he tells us, in a passage that will be often quoted in the centuries that are to come, "the distant sea-line of the north horizon was defined in the north and north-west points of the compass; but even this did not afford me any idea of the breadth of the lake, as an archipelago of islands, each consisting of a single hill, rising to a height of 200ft. or 300ft. above the water, intersected the line of vision to the left, while on the right the western horn of the Ukerewe Island cut off any further view of its distant waters to the eastward or north. A sheet of water—an elbow of the sea—however, at the base of the low range on which I stood, extended far to the eastward, to where in the dim distance a hummock-like elevation of the main-land marked what I understood to be the south and east angle of the lake."

#### BAKSHISH.

The travellers encountered strange races. Men and women seem to live there in a continual condition of drunkenness. Native beer, a muddy beverage at best, was drunk all day long, and it was only in the intervals between potations that a chief could be seen or any business undertaken. But they were always sober enough to beg, and on no occasion did anybody pay a visit without being asked for something

before he left. One would demand the iron camp-stool on which he had been squatting, and another would open his conversation by a request for some beads, or anything else—they were not particular what, so long as it was portable. At Suwarora's capital a messenger arrived from M'tesa, King of Uganda, a personage destined to be heard of very often in future years, but until then a strange name to the outer world. But this ambassador though willing to take to his master Speke's card, in the shape of a red pocket-handkerchief, declined to accept a revolving rifle, on the plea that the King might think it magic, and act accordingly. For the same reason one of the officers of Suwarora refused to carry to that sovereign a five-barrelled pistol.

#### A BEAUTIFUL COUNTRY.

According to the records of Speke and Grant—gathered during the second expedition—Uganda is in parts a splendid and fertile tract of country. One of the valleys, through which flowed the Victoria Nyanza—a stream which, in a cooler climate, would have been dear to the trout fisher—was clothed with noble trees and all kinds of luxuriant vegetation. Among these the pandana palm reared its head in addition to fine gardens of plantains. The common weeds were large thistles and wild indigo; and far beyond they could see lines of what looked like extinct cones, resembling those of Auvergne, in France, while still further were the rich grassy mountains of Karagwe and Kishakka.

#### THE SOURCES OF THE NILE.

Speke's exultation at the discovery—or the confirmation of a discovery—he had made, is sometimes described as premature, inasmuch as we now know the Victoria Nyanza to be only one of the Nile sources, and that other lakes contribute their surplus waters to its flood. In reality, time has added to instead of diminishing the importance of the Victoria Nyanza source, for the other lakes, which were at the time of the discovery believed to be as large as, if not larger than it, are now known to be much smaller. It was, therefore, with every right to be jubilant that Speke's party began their journey down the Nile towards the sea "in five boats of five planks each, tied together and caulked with rags," from a point a little below the Ripon Falls, in the hope of meeting Grant. The wanderings of other travellers are either described by Mr. Brown or told by themselves in the succeeding pages. The brief summary I have given of a couple of



chapters in this highly entertaining volume will afford some notion of the nature and variety of its contents. A careful perusal of the book by those interested in the Dark Continent will tend greatly to elucidate the African problem, which has so puzzled and disheartened many in this generation, and which may be solved by the next. G.A.

## INHABITED WORLDS.

*W. A. H. (Willimantic, Conn.) (1) Is it not a fact that our earth is the only globe in the universe inhabited by intelligent human beings? (2) Is it believed by those who know best that there is an inhabited planet in our solar system besides the earth? (3) If so, are those inhabitants supposed to be organized like human beings? (4) What arguments are adduced in favour of the theory of the plurality of worlds.*

(1) According to the best modern calculations, there are no less than 500,000,000 of stars of various magnitudes within the range of the best telescopes, and photography reveals an infinitude of worlds, which baffles all attempts to be conceived by the human mind. Our own sun, itself 1300 times larger than our own planet, sinks into insignificance beside that giant sun, Sirius, and the latter in its turn is dwarfed by other luminaries in infinite space. In view of this fact it would be mere presumption to assert that our microscopic earth—a “grain of sand on an infinite seashore”—is the only centre of intelligent life.

(2) The fact that most of the planets, as the stars beyond our system, are inhabited, has been admitted by men of science. Laplace and Herschell believed it, though they wisely abstained from imprudent speculations, and the same conclusion has been worked out and supported with an array of scientific considerations by Camille Flammarion, the well-known French astronomer. Of the long list of great thinkers who believed in the plurality of inhabited worlds in general we only mention the great mathematicians Leibnitz and Bernouilli; Isaac Newton himself, as can be read in his “Optics;” Buffon, the naturalist; Condillace, the sceptic; Beilly, Lavator, Bernadin de St. Pierre, Diderot, and most of the writers of the Encyclopaedia. Following these comes Kant, the founder of modern philosophy; the poet philosophers, Goethe, Krause,

Schelling, and many astronomers, from Bode, Ferguson, and Herschell to Lalande and Draper, with many of their disciples in more recent years.

(3) Many are the romances and tales, some purely fanciful, others bristling with scientific knowledge, which have attempted to imagine and describe life on other globes ; but we always find that the new world is but the one we ourselves live in, and its inhabitants the men of our own race, presented either, as with Voltaire, under a microscope, or with de Bergerac, a graceful play of fancy and satire. Commenting on this tendency, Flammarion in his work "*Sur la Pluralité des Mondes Habités*," says, "It seems as if to the eyes of those authors who have written on this subject the earth were the type of the universe, and the man of earth the type of the inhabitants of heavens. It is, on the contrary, much more probable that, since the nature of other planets is essentially varied, and the surroundings and conditions of existence essentially different, while the forces which preside over the creation of beings and the substances which enter into their mutual constitution are essentially distinct, it would follow that our mode of existence cannot be regarded as in any way applicable to other globes." (Page 439).

(4) The facts of physical astronomy speaks strongly in favor of the presence of life, even organized life, in other planets. Thus, in four meteorites which fell, respectively, at Alais, in France, the Cape of Good Hope, in Hungary, and again in France, there was found on analysis, graphite, a form of carbon known to be invariably associated with organic life on this earth of ours. In one meteorite which fell at Argueil, in the south of France, in 1857, there was found water and turf, the latter being always formed by decomposition of vegetable substances. Flammarion shows, in addition, that all the conditions of life—even as we know it—are present on some at least of the planets, and points to the fact that these conditions must be much more favourable on them than they are on our earth. Thus, Venus, like Mercury, has a very dense atmosphere, as also has Mars ; and the snows which cover their poles, the clouds which hide their surface, the geographical configuration of their seas and continents, the variation of seasons and climates, are all closely analogous to those of our earth.

The three conclusions which M. C. Flammarion formulates as vigorous, and exact deductions from the known facts and laws of science are calculated to convince the sceptical mind



of the plurality of inhabited worlds :—I. The various forces which were active in the beginning of evolution gave birth to a great variety of beings on the several worlds, both in the organic and inorganic kingdoms. II. The animated beings were constituted from the first according to forms and organisms in co-relation with the physiological state of each inhabited globe. III. The humanities of other worlds differ from us, as much in their inner organization as in their external physical type.—*The World.*

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## EL COCO.

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El cultivo del coco en Jamaica es objeto de estudios muy curiosos. Se distinguen las varias clases por la forma y tamaño de la nuez, así como por el grueso de la corteza y el grueso de la pulpa. El llamado curasao es una nuez grande con corteza dura y mucha carne. El maddén es muy pequeño, crece en largos racimos, y mientras que el curasao rara vez tiene más, de 6 ó 7 cocos en el racimo, últimamente se exhibió uno de Maddén que contenía 29 cocos. El curasao produce la mayor cantidad de aceite, ó sea 12 botellas cada cien cocos. Cuando el coco retoña, se coloca en la tierra por su parte más plana, y debe estar tan inclinado, que la leche ó el agua penetren y el retoño crezca más pronto. Mientras más ligero se trasplante el retoño (siendo la estación favorable), más fuerte será la planta. La mejor época para esto, es el principio de Octubre. Cuando se hace una siembra, la tierra debe ser desyerbada toda, pues el árbol no requiere sombra. El suelo debe ser gredoso, húmedo y bien desaguado. La distancia entre árboles debe ser media cadena, aunque pueden plantarse hasta á 40 pies, especialmente si la tierra es muy humeda, porque entonces el sol pasa entre las ramas cuando los árboles están crecidos y caliente el piso. Al trasplantar la nuez, se entierra hasta el borde, dejándola al nivel del suelo, luego se limpia con la azada el terreno en una circunferencia de 3 á 5 pies. Mientras crece la mata, puede sembrarse yerbas de guinea en el terreno, dejando un espacio de cinco pies al rededor de cada planta. La experiencia ha demostrado que lo mejor es dejar quieta la mata y que crezca como ella quiera, sin cortarle alguna rama.

La planta comienza á producir á los 7 años. General-

mente se deja que el coco caiga por sí solo, y se recoge cada uno ó dos días, para llevarlo al depósito. La mayor parte de los cocos embarcados en Jamaica van para América y Canadá, aunque una gran cantidad se embarca para Inglaterra y para el Continente. Cuando se mandan para el primero de los países nombrados, las frutas vienen peladas, mientras que para Europa se envían sin pelar. El precio se calcula por término medio en 2 centavos cada fruta. Algunos hacendados, en vez de exportar su producción, prefieren extraerle el aceite, lo cual se hace por un método sumamente sencillo. Después de pelado el coco se parte, y se acerca al fuego para que la carne se separe de la cáscara; entonces se lava aquélla sin necesidad de quitarle la corteza negra que le queda al salir de la cáscara, y luego se raya la carne, se coloca en una cuba, se le echa agua hirviendo, y por último, se cuele el todo. Cuando el agua se enfria, el asiento sobrenada, se recoge fácilmente y se deja enfriar, con lo cual queda listo para ir al mercado. El aceite se vende á 12 centavos la media botella. Se trata hoy de introducir en Jamaica, manufactura de manteca do coco.—(*El Porvenir*).

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## MANY-EYED MONSTER.

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ALTHOUGH A GREAT ANNOYANCE THEY SERVE  
A PURPOSE.

The question where flies come from is asked many times during the summer. It is always a mystery to the woman who has her house well screened how even one of these little pests can get in.

The parents of a good many of them were probably housed a year before, when, in the autumn, vigilance was relaxed and perhaps a door or window left unguarded.

With the instinct with which nature has provided them they crept in the warm house into cracks not perceptible, and there they hibernated. There, too, they lay their eggs, 177 to each fly, thus looking out for the propagation of the race; and so, when the first warm days come they surprise us by buzzing away on the windows or around the table.

In the meantime the eggs are hatching and by "fly-time" they come forth in swarms.

Sometimes in the dead of winter a fly will appear, beguiled from his resting place by the deceptive warmth of



the furnace-heated house. He seems a harbinger of spring and perhaps one may be inclined to pet it a little. Don't do it. Kill it and thus put an end to a prospective future generation of flies. They are natural scavengers. Their purpose in life is to consume various substances which are thrown off from the human body, by articles of food and by almost every animal and vegetable production when in a state of change. The substances are given out in such small quantities that are imperceptible to common observers and not removable by ordinary methods of cleanliness, even in the best kept room.

When a fly persists in crawling over one's face it is merely taking care of the particles of dead matter thrown off through the pores and thus helps to keep the complexion clean. So it is really doing good while it annoys.

As a common fly has about 4,000 eyes it is no wonder it is so hard to catch, or that it evades the blows aimed at it.—  
*Boston Herald.*

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## THE TELESCOPE AND THE MICROSCOPE.

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It was the telescope, said Dr. Chalmers, in his splendid astronomical discoveries, that enabled us to realize in some degree, the vastness of the universe. But about the time of its invention another instrument was formed which rewarded the inquisitive spirit of man with a scene no less wonderful. This was the microscope. The one led me to see a system in every star; the other shows me a world in every atom. The one taught me that this mighty globe, with the whole burden of its people and its contents, is but a grain of sand on the field of immensity. The other teaches me that every grain of sand may harbor within it the tribes and families of a busy population. The one tells me of the insignificance of the world I tread upon. The other redeems it from all insignificance, for it tells me that in the leaves of the forest and in the flowers of every garden, and in the waters of every rivulet, there are worlds teeming with life and numberless as are the glories of the firmament." So it is plain that if the observation of the starry universe suggests the thought that God's kingdom is too great to justify the belief that we are noticed

and cared for by Him, the observation of any portion of His works, however minute, indicates that there is nothing too small for my constant and superintending care. If science makes faith in God's care difficult, science also offers to faith the most abundant aid. It shows that while His power rolls through space the millions of worlds He has created, at the same time He feeds the ravens when they cry, and clothes every lily with its beauty, and numbers even the hairs of our heads and the leaves that clothe the forest with their verdure and beauty.

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### MISTAKES ABOUT ALCOHOL.

There is a common belief that alcohol gives new strength and energy after fatigue sets in. The sensation of fatigue is one of the safety valves of our machine ; to stifle the feeling of fatigue, in order to do more work, is like closing the safety valve so the boiler may be over heated and explosion result. It is commonly thought that alcoholic drinks aid digestion, but in reality the contrary would appear to be the case, for it has been proved that a meal without alcohol is more quickly followed by hunger than a meal with alcohol. In connection with the sanitation of armies thousands of experiments upon large bodies of men have been made, and have led to the result that, in peace or war, in every climate—in heat, cold or rain—soldiers are better able to endure the fatigue of the most exhausting marches when they are not allowed any alcohol at all. That mental exertions of all kinds are better undergone without alcohol is generally admitted by most people who have made the trial. It appears certain that from 70 to 80 per cent. of crime, 80 to 90 per cent. of all poverty and from 10 to 40 per cent. of the suicides in most civilized countries are to be ascribed to alcohol.—*Westminster Review*.

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### COTTON SEED OIL.

The uses to which cotton seed oil is put appear to be manifold and a trade is now being opened for the carriage of the oil in bulk by means of tank steamers. In an article on the subject an expert states that the cotton seed oil is made into the finest Holland butter, that it is taken to Limburg, and goes to America again in the form of the famous cheese ; that it goes to Switzerland, and returns as Neuchatel cheese ; and that it is taken as far south in Europe as Italy, from which country it again crosses the Atlantic, transformed into pure olive oil. He



also declared that the cotton seed oil was a healthful food product, and held that the trade was likely to increase so rapidly that other tankers would be put into it. The oil is brought to New Orleans, from all parts of the States, especially from Texas; it is pumped from the cars into the refinery, and from the refinery into the tankers. When it reaches Rotterdam it is pumped into tank cars, which are distributed throughout Europe.—St. Thomas *Tidende*.

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## GENERA AVIUM.

Mr. Boucard begs to inform his scientific Friends and Correspondents, that he is preparing the manuscript of a GENERA AVIUM, and being very anxious that the said work should be as complete and as perfect as possible, he will consider it a great favour, if any of his Correspondents can procure him some of the Genera mentioned in the adjoining list :—

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*some cannon made in the Philippines were carried by this route to the fortress of Uloa, near Véra Cruz.* The fourth is that of Uraba to the Gulf of San Miguel.

The distance between Nombre de Dios and Panama is sixty-eight miles, that of Uraba and San Miguel seventy-five miles; these two are the most difficult, but handicraft is plentiful. If it is decided to make the passage, it will be done. Means are not wanted. The Indies, which will benefit by this work, will supply them. For the King of Spain, who disposes of the Indies' wealth, it is possible and easy, so much the more so, that the object is the trade of spices.

If the passage of which I speak is made, the navigation to Moluccas will be shortened one third, and the ships would sail constantly in warm latitudes without leaving the domains of the Spanish Monarchy, and without fear of meeting enemies. Our goods would be sent to Peru and other provinces on the same ships freighted in Spain. Much expense and trouble would be avoided :—

*Herrera* mentions also the same lines quoted by Gomara, and he adds that the project of a Canal was proposed to *Charles Quint*, and that it was always a subject agreeable to speak upon, with the Emperor.

Nevertheless, neither the Emperor nor his successors ever decided upon the digging of the Canal.

This was attributed to their firm resolution to keep the traffic between America and the Moluccas entirely to themselves. Everyone knows that for more than two centuries this traffic enriched, and gave a great importance to Spain. What Spain never did, it is probable that the Scotch Company would have tried to do, if they had had time. The founder, Mr. Paterson, a very bold man, had projected to take possession of the Isthmus. To that effect, he established a Colony of merchants and soldiers in the Isthmus. In his manifesto he said that those who would be in possession of the Isthmus would be masters of the universal trade. In reply to this manifesto, Scotland contributed to equip a first expedition of twelve hundred men, who landed in the Gulf of Darien, and founded several localities, which they named *New Caledonia* and *St. Andrew*, but the Spaniards soon obliged them to abandon the country.

In 1804, when the celebrated *Baron de Humboldt* returned from his long voyage in Mexico and South America, in his *Political Essay of New Spain* and in his *Historical Relation of the Voyage to Equinoctial Regions*, he called the attention

of all the World to the possibilities of digging an Interoceanic Canal between the two Oceans. The project which he thought best was that of the Isthmus of *Cupica*, but he was not opposed to those of Panama and Nicaragua.

In 1842, he wrote to Mr. Salomon: "Twenty-five years ago I sent you the description of a project of communication between the two Oceans, either by the Isthmus of Panama, the lake of Nicaragua, or the Isthmus of Cupica. It has been discussed topographically, but nothing has been done yet."

This citation shows that these three projects were those which he considered to be the best, leaving out entirely the two others of *Tehuantepec* and that of *Darien to Raspadura*.

In 1827, the celebrated *General Bolivar*, the father of South American Independence, who spoke with Humboldt and was very interested in the question of the Canal, instructed the English engineer, Mr. Lloyd, to survey the Isthmus of Panama; and it is probable that if the English capitalists had been disposed to undertake the opening of a Canal at that time, they would have been certain to obtain the most complete co-operation from Bolivar and his successors.

Immediately after the constitution of the Central American Confederation, the Hon. Deputy for Nicaragua, *Mr. Manuel Antonio de la Cerda*, proposed to Congress to discuss the question of the Canal, which was forthwith done and approved. But the Guatemalan Archives relating to Nicaragua having been destroyed, when the Mexicans entered and occupied the capital, it was resolved to make a new survey.

This survey was made during the years 1823-1825, and on the 12th of July, 1825, the President of the Republic, Don *Manuel José Arce*, deputed the authorisation to a private Company for the opening of a Canal through the Isthmus of Nicaragua. Among many propositions offered by various Companies, two were the principals, one presented by the engineer, Mr. John Bailly, in the name of Messrs. Barclay, Herring, Richardson & Co., of London, the other by Mr. Carlos Beneski in the name of Aron Palmer, of New York. The proposition of Mr. Beneski was accepted, but it came to nought.

In 1828, *Guillaume I.*, King of Holland, the richest Sovereign of Europe, and a very enterprising man, sent General Verveer to the grand Assembly convoked in Panama in 1825. The Central American Confederation was represented in that general Assembly by M. M. Lorrababal and Molina. General Verveer was so impressed with the communications made by M. M. Larrazahal and Molina to him,



that he decided to return to Holland, and advised the King to send a Minister to Guatemala with the special mission to promote the undertaking of the Canal. This Minister was General Verveer himself, who arrived in Guatemala in March, 1829, well decided to do all what he could for the success of this gigantic work.

But it happened that a revolution had taken place during his absence, and *General Morazan*, had just been elected to power, and was very busy in establishing his government. A long time passed without anything being done, and it was only on the 21st of October, 1830, that the Federal Congress sanctioned the contract passed between General Verveer and Guatemala.

When Central America thought that a new era of greatness was going to begin for their country, the French and Belgian Revolutions took place, and in consequence everything was stopped, and, after the loss of a great deal of time, resulted in the abandonment of the undertaking.

In 1837, General Morazan thinking that it would be very difficult to induce foreign capitalists to undertake the opening of the Canal, decided to have it done by the country itself. With that purpose, he instructed M. M. John Bailly and José Bâtres to make a survey of the country. The survey lasted about six years, during which a revolution overthrew *Morazan* in favour of *Carrera*, and after all, the survey made by M. M. Bailly and Bâtres resulted only in an interesting publication published in 1843, in which the outline surveyed is fully shown by them, that of the River San Juan del Norte, the lake of Nicaragua and San Juan del Sur, by the river Lajas.

After the fall of Morazan, the Confederation was dissolved. The State of Nicaragua proclaimed its independence in 1838. Now the matter of the Canal rested entirely with it. Mr. Pierre Rouhaud, my friend of Granada, was authorized to go to France and see if he could find capitalists willing to undertake the opening of the Canal, but he did not succeed. Several years after in 1843, Count Hompesch, who presided over the Belgian Company of *Santo Tomas*, was also asked to take the matter in hand, but he had the same fate as Mr. Rouhaud. In the meanwhile, Mr. Castellon was sent to France to solicit the protectorate of the Government of *Louis Philippe*. Mr. Guizot, who had sent Mr. Napoleon Garella to survey the Panama route did not care for the offer of Mr. Castellon,

who then thought of Prince *Louis Napoléon Bonaparte*, actually imprisoned in the fortress of Ham.

Mr. Castellon found in the Prince, a person well disposed to the scheme. However, he could not get a decisive reply, and returned to Nicaragua without anything more than a treaty signed with a Belgian Company.

In 1846, Prince Louis Napoleon wrote that he was disposed to accept the propositions of Mr. Castellon. In reply to that letter, the Nicaraguan Government, sent the Paris Minister to Ham for the signature of a treaty very favourable to the Prince.

Three months after, he was free, and immediately, a pamphlet entitled *the Canal of Nicaragua or Project of the Function of the Atlantic and Pacific Oceans*, was printed in London. In that pamphlet he gave a resume of his ideas about the undertaking trusted to his credit and energy. His project was to make use of the river San Juan, the lake of Nicaragua, the lake of Managua and Realejo on the Pacific. It was beforehand called, *Canal Napoleone*, but the French revolution of 1848, which made *Napoleon*, President of the French Republic, in the first place, and afterwards Emperor of France, modified all his ideas about the Canal, and it was again relegated for a time.

In 1849, a contract was signed between Nicaragua and Mr. Brown, the representative of an American Company, but nothing came of it. After Mr. Brown, came the White and Vanderbilt Company, but Nicaragua, before signing the agreement, asked from the American Government to be security for that Company. Mr. Squier, the American Resident Minister in Nicaragua, who had special instructions from his Government to obtain the concession in favour of an American firm, guaranteed the responsibility of the United States. Accordingly, the Vanderbilt contract was signed the 27th of August, and ratified by Congress the 25th of September following. The next day, the Congress ratified also a treaty of confederacy and goodwill with the United States, to the satisfaction of all.

The treaty of the 27th of August was as liberal as the preceding ones. All flags were treated alike.

Nicaragua reserved for itself the lion's share, which probably had a certain influence on the ultimate want of success.

That country had stipulated that £2,000 were to be paid to them after the ratification, £2,000 yearly until the conclusion of the Canal, and one million of shares, when emitted. Besides, twenty per cent. during twenty years on the nett



products, and twenty-five per cent. during the remainder of the concession, which was for eighty-five years. The promises made by that country were to give sixty square miles of land to the Company, with the perspective for the heirs of the shareholders of an indemnity of fifteen per cent. during ten years on the nett products of the Canal, if the cost did not exceed one hundred millions, and during twenty years if that sum had been exceeded, these sums becoming due at the expiration of the concession.

This concession had the same fate as the preceding ones, and was absorbed in the national catastrophe of which Walker was the hero.

Indeed it is extraordinary to see how badly the South American Republics understood their own interests.

Instead of helping the companies which devote their time and capital in favour of their countries, they only think of making a good business of it.

If they chose to follow the example given to them by *Europe* and *North America*, by not reserving the best part for themselves, but by helping the companies, with large subventions, guarantee of interest, large grants of lands, and privileges extending to a very long time, it is probable that one of the Canals would have been opened a long time ago.

Meanwhile they remain so narrow-minded, and see only to their immediate interests, there is little chance for the completion of such gigantic and wonderful works as those of the Interoceanic Canals.

If Europe and North America had acted in like manner, railways and maritime services, and all other great undertakings, would never have been completed, and the wealth of these countries would have remained stationary, as it is the case with the Central and South American Republics.

If these countries really want to attain the importance, for which they are fit, it is indispensable that the men who govern them should change their tactics, should have great minds, be large and generous, and think more of the future, and not so much of the present. They cannot do better than to follow the examples given to them, by the Founders of their Independence, such as *Bolivar*, *Hidalgo*, *Morazan*, and many others.

On the 1st of May, 1858, a treaty was signed between *Mr. Thomas Martinez*, President of the Republic of Nicaragua, *Mr. Juan Rafael Mora*, President of the Republic of Costa Rica, and *Mr. Felix Belly*, Publicist.

This treaty, containing 28 separate clauses, granted the execution and the exploration of a maritime Canal between the two Oceans to Mr. Joseph Belly exclusively.

The principal clauses were, that the length of the concession was for 99 years, that three miles of land on each side of the Canal were granted to the Company, that all the mines found, should be the property of the Company, and explored according to the laws of the country, that the two ports in both Oceans should be free, the Canal opened to all flags, at a minimum rate of passage, which was fixed at 8 shillings per ton and £2 8s. per each person, free passage for ten years for the ships of the Company, no taxes whatever on the properties of the Company for twenty years, etc., etc.

For the two Republics, it was agreed that eight per cent. of the gross receipts should be paid and divided between them, and that the two Republics guaranteed the Company and their agents from all attacks, and would build a first-class lighthouse on each side of the Canal, etc., etc. Although Mr. Felix Belly, by issuing several interesting publications, and otherwise, did all that he could to obtain the co-operation of French capitalists, he did not succeed, and after several attempts, and surveys, he was obliged to desist in this enterprise in 1861.

In 1867, he published a very interesting book in two volumes entitled, "*A travers l'Amérique centrale, Le Nicaragua et le Canal Interocéanique*", in which he explains all the difficulties and chicanery from which he had to suffer at the time.

After Mr. Belly, several other Companies were formed, but they had the same fate.

Now we come to the last, known as *The Maritime Canal Company of Nicaragua*, incorporated by an Act of the Senate and House of Representatives of the United States of America, in Congress assembled; Approved February 20th, 1889.

The Committee of Direction was composed in 1889 of:

Hiram Hitchcock, President.

Chas. P. Daly, Vice-President.

Frederick Billings, Chairman Executive Committee.

Thos. B. Atkins, Secretary and Treasurer.

A. G. Menocal, Engineer.

Mr. Ford, Engineer, was the special Delegate of the Company at the Paris International Exhibition of 1889.

Everyone will remember the interesting model of the Canal exhibited in the Nicaragua Pavilion, under the special

care of Mr. Ford, who was always willing to give all necessary information to the public. Here is a copy of the prospectus issued and distributed to the visitors at the Paris International Exhibition.

### THE NICARAGUA CANAL.

"This Maritime Canal, for the largest ships, is being constructed through the territory of the Republic of Nicaragua. In part it borders upon the Republic of Costa Rica. It traverses the lowest depression of land in the Cordillera, between the Arctic Ocean and Cape Horn. This depression is occupied by a large inland sea of fresh water, called Lake Nicaragua, and by its outlet the San Juan River. The western border of the lake is within twelve miles of the Pacific Coast, from which it is separated by a low divide of forty-two feet. The surface of the Lake is one hundred and ten feet above the level of the sea. The lake drains towards the Atlantic into the Carribean Sea, through the San Juan River. This great natural feature is to be utilized in the proposed Canal. The lake is one hundred miles long, has an average width of forty-five miles, and a variable depth, reaching in some places one hundred and fifty feet. The San Juan River is already navigable for river and lake craft throughout most of its length.

The details of work to be done are, roughly, a breakwater at Greytown, on the Carribean Sea, dredging thence to the westward ten miles through alluvial ground, then a lock of thirty-one feet lift. At two miles beyond, there will be a second lock, or double lock of the combined lift of seventy-five feet, and a dam across the small stream *Deseado*, above which will be a basin affording four-and-a-half miles of free navigation in the valleys of two small rivers, the *San Francisco* and the *Machado*. Here the water will be raised by dams and embankments, and the basins will connect directly with the San Juan River, above a large dam across that river, which will raise the surface level in the river and lake and secure additional free navigation of sixty-four-and-a-half miles in the river, and fifty-six-and-a-half miles across the lake. On the western side of the lake the Canal enters a cut of slight depth in the earth and rock, nine miles long, issuing thence into the Tola basin, with five-and-a-half miles of free navigation, obtained by damming the small stream, the *Rio Grande*. At this dam a series of locks lowers the level eighty-five feet, and the Canal proceeds in excavation down



the valley of the Rio Grande, a distance of two miles, to the last lock, a tidal lock of twenty to thirty feet lift, below which the Canal enters the upper portion of the harbour of *Bruto*, one-and-a-half miles from the Pacific Ocean.

The location of the Canal is the result of thorough and minute examination of the region which it traverses, and of due consideration of recent surveys.

The total length of the route from Ocean to Ocean is one hundred and seventy miles, divided as follows:—

Canal in excavation, east side	...	16	miles
Canal in excavation, west side	...	11½	miles
Six Locks	... ..	½	mile
<hr/>			
Total	..	...	28 miles
Basin of Deseado	...	4½	miles
Basin of San Francisco	...	11¼	miles
Basin of Tola	... ..	5½	miles
<hr/>			
Total navigation in basin			21 miles
Free navigation in River San Juan		64½	miles
Free navigation in Lake Nicaragua		56½	miles
<hr/>			
Total free navigation	...		121 miles
<hr/>			
Total from Atlantic to Pacific			170 miles

With the exception of the rock cuts in the eastern and western divides, the Canal in excavation will be at all points wide enough for two ships to travel in opposite directions. Through the basins and in the lake and River San Juan vessels can pass each other and navigate with entire freedom.

The traffic of the Canal will be limited only by the time required to pass a lock. On the basis of 45 minutes as the time consumed in the operation, and that but one vessel will pass in each lockage, the number of vessels which may pass through the Canal in one day is calculated at 32 or in one year, 11,680, which based on the average tonnage of vessels going through the Suez Canal, will give an annual capacity for traffic of over 20,000,000 tons. The locks, however, are 650 feet long and 70 feet wide in the chamber, and two vessels, each of 2,000 tons displacement can be passed in one lockage, thus materially increasing the estimated capacity. The minimum depth of water throughout the Canal will be 30 feet.

The lowest flow of the lake in the dry season is 11,390 cubic feet per second. Its average discharge is 14,724 cubic feet per second, or in one day 1,272,530,600 cubic feet. The water required for 32 lockages in one day is 127,400,000 cubic feet: consequently the lake supply alone is ten times the maximum wanted for the operations of the Canal.

The time consumed in passing from Ocean to Ocean by steamers, is estimated at 28 hours, which includes one hour and twenty minutes for possible detentions in narrow cuts."

To this day, the Maritime Canal Company of Nicaragua, has made many surveys, and I think that excavations have been commenced at several places, but the result has been of little importance.

On the 21st of February, 1891, there was a debate in the Senate at Washington on the Nicaragua Canal Bill. Some Senators spoke in favour, others against, and the Senate ultimately adjourned without having come to any decision regarding the Bill.

It was estimated that the Canal could be made at a cost of 100,000,000 dollars, or £25,000,000; but in my Journal the *Humming Bird*, Vol. 1, page 30, I say that I am not of that opinion, and that the opening of the Nicaragua Canal will cost just as much as that of the Panama Canal and probably more.

I am still of the same opinion.

In 1892, there was another debate in the Senate at Washington about the Nicaragua Canal Bill. The promoters asked from the Government of the United States to guarantee a minimum interest of three per cent, I believe, on all the capital subscribed, during the completion of the work, but again the Senate adjourned without having come to any decision.

I do not know what will be the next move; but I am always of the same opinion as already expressed in the *Humming Bird*, that one day or another, not far distant, not only the *Nicaragua Canal* will be opened; but also the *Panama Canal*. In a very short time the opening of both of them will be an absolute necessity, and both will rank amongst the most magnificent and most remunerative works of the Twentieth Century.

From the beginning, I have been in favour of the Nicaragua Canal, and in the Geographical Congress of Paris, 1878, at which I assisted as a Member of the Congress and as the Delegate of the Republic of Guatemala, I supported

the opening of the Nicaragua Canal, in preference to that of Panama ; but it was not so much because I considered the difficulties of the undertaking to be less, but more especially for philanthropic purposes, my belief being that loss of life would be less in Nicaragua than in Panama, in consequence of the better resources of Nicaragua with regard to all the commodities of life.

Having resided in both countries, I was able to form an opinion on the subject, and I regretted very much at the time, that the majority of the Delegates of the International Congress held in Paris in 1879, did not vote for that route. But as I said in the *Humming Bird*, January, 1892, and in other notices which I wrote on the Panama Canal, now that this last one is already half done, it would be better to complete the Panama Canal first, and to begin the Nicaragua Canal soon after the opening of the former, because twenty or thirty years hence, I doubt whether even if the two Canals will be adequate to the traffic of that time.

Furthermore, it is *absolutely necessary* that all nations should leave behind all idea of monopoly on these routes and abandon their keen competition about it. Such enterprises must be quite international, the work of all the nations grouped together hand in hand, and contributing, each one, according to its means, to the realization of this gigantic and admirable work of men, which once opened will be a great factor to the future and greatness of the world at large.

It is also *imperative* that the Republics of *Colombia*, *Nicaragua*, and *Costa Rica*, should renounce entirely to their exigencies. The members of the Governments of these countries must give all facilities and help the Companies in every way. They must think of the great future of their countries, which depend greatly on the success of these grand undertakings.

I conclude with that part of the message of President Harrison about Nicaragua, sent and read in the Congress of the United States on the 6th of December, 1892, and with that of President Cleveland read at the opening of the Session of 1893.

### THE NICARAGUA CANAL.

“The President then repeats with great earnestness his recommendation that prompt and adequate support should be given to the American company engaged in constructing the Nicaragua Canal. It is, in his opinion, impossible to



overstate the value of this enterprise from every standpoint, and he hopes that there may be time even in the present Congress to give it an impetus which will ensure the early completion of the work and secure to the United States their proper relations to the enterprise when it is completed."

In the message presented by President Cleveland to Congress on the 4th of December, 1893, there is a passage concerning the Nicaragua Canal, which seems to indicate that the American Government is willing to give a helping hand to the Promoters of the Nicaragua Canal Company. If the measures proposed by President Cleveland pass, there are some probabilities that the completion of the Nicaragua Canal may take place before that of the Panama.

I hope that this news will stimulate somewhat all persons interested in the Panama Canal, and that means will be soon found permitting to continue the works, so as to be able to complete and open the two Canals at the same time, the one being the completion of the other.

## CHAPTER XIII.

## GRANADA.

Departure from Granada—The Lake—River San Juan—San Juan del Norte—Sailing from San Juan del Norte—At Sea—Arrival in New York—New York in 1853-1854—International Exhibition of New York—Adelina Patti—Natural History of New York—Humming Birds—The English Sparrow—Population—Climate—Industry Commerce.

**B**EFORE leaving Granada, I may say a few words about its inhabitants. I found them always sociable and sympathetic to strangers. Once admitted in a family, you could depend on a hearty welcome, and soon was considered as one of the family. Distractions being scarce, it was the custom to make frequent visits one to another, principally at night. Chocolate and cigarettes were usually offered to the guests in the course of these visits. It is there that I saw, for the first time, ladies smoking cigarettes. Among the people, who were a mixture of Indians and Negroes, with all their half-breeds, women used to smoke cigars.

One of the most extraordinary objects which attracted my attention during the passage of a religious procession was to see *Jesus Christ* represented black. The majority of the inhabitants being of that colour, hence the probable reason of such a thing.

On the 18th of May, 1853, I embarked in a large boat waiting for me on the lake. Excepting a small covering of palm leaves, erected at the back part of the boat, it was open on all sides. It was crammed with goods, forming an elevated floor. On each side was a large board on which the watermen walked, when pushing the boat with *palancas* (long poles). The boat was manœuvred by ten rowers and one at the helm, all of them black and totally naked.

On that day, they only rowed to some small islands close by, where they usually make their provisions of plantains, which is their principal and sometimes sole food.

The plantations were in the midst of the primeval forests which cover these islands. It was a grand sight, quite

animated by an extraordinary number of birds and mammals—chiefly parrots and monkeys. We saw many howling monkeys, and killed two of them.

But in doing so, I was invaded by thousands of *garapatas*, an insect classified among the *Arachnidae*, or spiders. They were of two sorts, one brownish very large, and another reddish, so minute that it could hardly be seen. I got rid of the large ones easily, but I was not so fortunate with the others, so that with the mosquitoes which were very numerous, I passed one of the most wretched nights possible.

These *garapatas* are flat, and introduce themselves in all parts of your body, incrusting their mandibles in your flesh, and remain there until they are fully grown. Then they leave, but meanwhile they literally devour you, causing all the time an insupportable itching.

I did not get entirely free of them until on board of the steamer on which I embarked for New York.

The men went on land and made themselves happy, drinking spirits.

I did not see them until the next day at twelve, and it was half-past two when we really started on our voyage. For a time we sailed amongst the islands. It was a scene of the most magnificent beauty. Animal life was exuberant. Birds, monkeys, crocodiles, fishes, could be seen in plenty on all sides. Showers were frequent but short. Our men were so lazy, that when unfortunately there was no wind, we scarcely advanced at all. We kept close to the shore, and we stopped every day at breakfast and dinner time. After dinner they remained for hours basking in the sun.

On the fifth day, one of them fell ill, and we were obliged to leave him in a small village. Another, with a bad leg, was also left there. Now the eight remaining, did not want to go on, and refused to move. It was only after having lost one day, and paid them £2 extra, that I induced them to go as far as the *Castillo*, the fort of San Carlos, which commands the entrances of the River San Juan and the Lake. Besides the fort, there were scarcely thirty houses, all of them built on the margin of the lake. It is a very picturesque site. I landed and made a visit to the Commandant of the fort, who was a very nice man. I told him about my men refusing to go forward. He had the kindness to settle that matter, and to supply me with two soldiers. From that moment all went well. We left *San Carlos* at one p.m., the men had scarcely anything to do, the current was strong



and propelled the boat at an average of three miles per hour.

The margins of the river, for a long while, are charming. It was a repetition of what I saw from *San Juan del Sur* to *la Virgen*, but even more picturesque on account of the river. For miles and miles the river flows on through primeval forests, rich in beauty and ever changing variety. Eye and ear are alike charmed by the luxuriant foliage of the trees, creepers, orchids, and many other parasitical plants.

Numerous animals give much animation to the beautiful scenery, many coloured birds fly about, flocks of parrots scream with all their might, monkeys of several kinds chatter or gambol in the trees, some of them are so fearless, that they stand quite close, looking at you when passing by. I was very much amused with an incident which took place at the time. So many monkeys were standing on the same branch, that when we passed, in the hurry of their flight, the branch broke, and nearly all of them fell in the water, but they easily swam back on land, none the worse for their involuntary bath, except for a piteous appearance.

Crocodiles are quite numerous, swimming lazily in the river, scarcely showing the end of their nose above the water, others basking in the sun on the margins of the river, not deigning to move at our approach. They had the appearance of fallen trunks. I had several shots at them, but without the least effect. They scarcely moved at all. I recommend the River San Juan to industrials in search of crocodile hides. At a very small cost, they could establish nurseries of these animals, and make money. Besides the crocodiles hides, they could also gather large quantities of *Iguanas*, a large species of lizard, over one yard in length from end to end, also much used for industrial purposes. The Iguana is a very peaceful animal, usually seen on the branches of the trees on the banks of rivers. They remain quite still at the same place for hours. They are usually green or brown sprinkled with dark spots. They are quite harmless, and can be easily domesticated. They feed on insects; they are oviparous and lay a large number of soft eggs, which, when boiled, are very good eating. They contain scarcely any albumen. The flesh is also very good to eat, and I made many good meals with them. *Jaguar* and *Puma* (*Felis onca* and *concolor*), *Danta* (*Tapirus dowi*), *Fabali* (*Dicotyles labiatus*), a kind of small wild boar *Venado* (*Cariacus rufinus*), *Cotuza* (*Dasyprocta punctata*),

and a quantity of squirrels (*Sciurus*) inhabit the forests of the River San Juan and were occasionally seen.

The Danta, or Tapir, is one of the most curious animals found in Central and South America. It belongs to the order *Ungulata*, or Hoofed Animals, sub order *Perissodactyla*, closely allied to the Elephant and still more to the Rhinoceros. It is an antideluvial form. The fossil species which have been found in different parts of the world scarcely differ from the living species known. These animals are characterized by having the muzzle prolonged into a small mobile trunk, a very short tail, three pairs of cutting teeth, and one pair of small canines. They have four toes on the anterior and three on the posterior feet. They are swamp-loving animals, excellent swimmers and divers. The species found in Nicaragua, *Tapirus dowi*, dedicated to the well-known Captain Dow, is very closely allied to *Tapirus bairdi*, found in Mexico and in Central America. It is about three-and-a-half feet long. The skin is very thick, and covered with a scanty coat of very short hair. The colour is uniform dark gray. It inhabits the inmost recess of forests. It is a powerful animal, and a good match to the Jaguar. It lives on vegetable matter, fruits, etc. When young it is easily domesticated. The flesh somewhat resembles that of the bull, and the skin can be used for many industrial purposes.

If it were not for the *mosquitoes* and *garapatas*, a trip along the River San Juan could be remembered as one of the most delightful and pleasant excursion in the Tropics. Next to the unpleasantness of these insects, there are the risks to which you are exposed in consequence of the dangerous currents of the river, especially at the rapids, where the river is densely besprinkled with rocks, leaving only a narrow and dangerous passage for boats.

Eight of these rapids have to be passed from *San Carlos* to *San Juan del Norte*. The first, and one of the worst, lies close to another fort, also called *El Castillo*, where a small village has sprung up since the starting of the American Company from New York to San Francisco.

When we arrived at that village, an American steamer was there expecting the passengers from *San Juan del Sur*. In consequence of these rapids the passengers have to be transhipped here to smaller steamers, and are sometimes kept waiting two or three days.

The *Castillo* is on the summit of a pyramidal hill. It was built by the Spaniards soon after the conquest of the

country. In 1747 it was thoroughly repaired. The site is well selected and fully commands the river. It is the celebrated place carried off by NELSON, in 1780, when Commandant of the *Hichinbrook*. With the troops commanded by Colonel Polson, he attacked the Spaniards, and took possession of the fort. The garrison made a stout and valliant resistance, but were soon compelled to surrender.

NELSON remained there several months, and lost nearly all his men from sickness, and he had himself a very narrow escape. In 1781 the place was evacuated.

The outside of the fort had a good appearance, but nearly all the inside was completely ruined, and was transformed into a small forest, all available spaces being occupied with trees and bushes. However, a small garrison occupied part of it.

We passed successfully all the rapids, and on our way saw many wrecks; among them, one of the American steamers, lost only a few days before. It was one of the two running between El Castillo and San Juan del Norte.

About three miles from the Castillo, we passed the small island Bertola, on which, remains of fortifications could be seen. The fort which existed on this island was the first taken by Nelson in 1780. On this island were buried the English, who died from the results of the war or from sickness. At a short distance from Bertola are the rapids of *Machuca*, one of the most dangerous. It was here that the American steamer was stranded.

The River San Juan, with its shoals of gravel, its rapids, rocks, and its numerous islands, which in many places scarcely leave a passage for boats or vessels, can be considered as very dangerous, and it is always a matter of congratulation when this voyage can be made without accident. At the end of our second day, from San Carlos, we arrived at San Juan del Norte. We had been twelve days on our way from Granada, a voyage usually made in six. So I was glad to see the end of it.

I stopped at an hotel kept by an Italian, at a cost of eight shillings per day, for board and lodging. San Juan del Norte, or Greytown, was at that time the centre of a great activity in consequence of the International transit. From twelve to twenty ships were usually anchored in the bay, which is fine, but very badly protected from the winds. Nevertheless, being at that time the only port on the Atlantic, and its peculiar position as the head of a railway or a canal,



it had a far greater importance than could be attributed to it from what I saw of the town.

Since 1848, it had been occupied by an English agent, acting and governing the country in the name of the King of the Mosquito Indians. Two English warships remained permanently here.

The town consisted of about two hundred houses and huts inhabited by several hundred people of all colours, blacks and mulattoes being the most conspicuous. Several hotels had been recently built and shops opened, all of them kept by foreigners, chiefly English, American, and Italians. The principal governmental appointments were occupied by blacks, or mulattoes from Jamaica.

Duties are paid on all goods landed here. When I arrived, the steamer for New York had just gone, so I was obliged to remain two weeks in San Juan.

During that time, I made several excursions in the neighbourhood; but I collected very little, because the country is flat, damp, and devoid of trees. The best species of birds which I secured was a beautiful crimson and dark red tanager, *Ramphocaelus dimidiatus*, which was plentiful.

At night, the moisture was so great, that in the morning the soil was soaked as if it had rained hard, and it was dangerous to start for hunting excursions before nine a.m. Showers were frequent, and in the intervals it was very hot. When fine, a sort of northern breeze began to blow about 4 p.m., and lasted part of the night. It was rather enjoyable.

The connection of the Lake of Nicaragua, with the Atlantic by the River San Juan, was discovered in 1529, and during the last quarter of the Sixteenth Century a considerable commerce was carried on, by this route between *Granada* and the *Lake Nicaragua*, and the cities of *Nombre de Dios*, *Carthagena*, *Havana*, and *Cadiz*. It is probable that the establishment of that port, and the construction of the forts along the River San Juan were made at that time. In 1665, after an invasion of that country by the English, the port of San Juan was fortified.

At the end of May, the passengers from San Francisco began to arrive and also those from New York, so that the place was crowded to excess for a day or two, and on the 3rd of June, I embarked on the fine steamer, *PROMETHEUS* for New York, where I arrived on the 15th of June, after a very fine passage. On board, I met an American whom I had known in San Francisco as a greengrocer. In four years he

had made such a fortune in that trade, that he was able to retire from business altogether with a very respectable income. On our way, we stopped several hours at Habana, but I shall leave the history of that pearl of the Islands, for another occasion, when I visited the town and its neighbourhood.

### NEW YORK.

I entered the magnificent port of New York, on the 15th of June, 1853. Entering from the Atlantic Ocean, you cannot be less than struck by the peculiar manner of the formation of the bay. On each side of this admirable bay there is a large and fertile Island. *Long Island* on the right, and *Staten Island*, on the left. After having passed the *Narrows*, where the distance between the two is narrow, the coasts widen suddenly, and give access to a large and deep sheet of water, which could contain easily all the vessels of the world. This is the port of New York. This magnificent position has greatly contributed to the rapid growth of the Imperial city.

*New York* itself is built on the Island of Manhattan, and a portion of the mainland.

I remained in New York from the 15th of June, 1852, to the 12th of July, 1854.

NEW YORK, the chief city of the United States is located at the mouth of the Hudson River in the southern part of the State of New York, and the city occupies the county of the same name. It is bounded on the south by New York Bay, on the west by the Hudson River, on the north by the city of Yonkers, and on the east by the river Broux. Spuyten Duyvil Creek and Harlem River divide the City into two unequal portions, and make the northern boundary of Manhattan Island. The city is 16 miles long, and varies in width from a few hundred yards to  $4\frac{1}{2}$  miles on the north part. Its area is about  $41\frac{1}{2}$  square miles or 26,500 acres, of which 12,100 are on the mainland. Its location is both beautiful, healthful, and very advantageous to commerce. Its large and commodious bay, the Hudson River, navigable for 150 miles, the neighbouring sea, and the diversified country about it, contribute to its attractiveness, while its varied surface and extensive water front conduce to its general healthfulness. Its position in the centre of the northern part of the coast, makes it a natural entrepôt for the Middle States. The Erie Canal and several lines of railroads place the city within reach of the great West, and on the East, New England joins the city. The State and city of New Jersey fringe the opposite bank of

the Hudson, and along the east, the city of Brooklyn and its neighbouring towns form a continuous city upon the eastern side. A few years ago, was completed the gigantic and wonderful bridge connecting Brooklyn with New York. From the Battery, which formerly was a very fine promenade, the view of the Bay, the Islands, Brooklyn, Staten Island, Jersey City, and the entrance of Hudson River present one of the most animated and beautiful pictures to be found. The upper part of the city lies opposite the Palisades, and is remarkable for its rural and picturesque scenery. The lower part, from the Battery for about three miles north, is rolling and sandy. It then rises slightly and becomes rocky. At Central Park, near the centre of the city now, but outside it in 1853, it rises into broken hills, and northward along the river, the land rises to a height of 238 feet at Washington Heights.

Above the island the land is hilly and rough. The lower part of the city has been much altered by filling and grading, and the original width has been materially increased by filling in the river on both sides. The city is compactly built up to 59th street, at the southern end of Central Park, and on the east of the park, it extends some three-and-a-half miles further to the Harlem River. All the villages on the north and west sides are now included in the city, which is so rapidly spreading up that it promises to be one of the largest and most populous in the world. Indeed, few cities in the world can vie with New York in the beauty and convenience of its site.

The port is defended by the strong fortress of Fort Tompkins on the west, and Fort Hamilton on the east, while old Fort Lafayette stands in the bay a short distance from the shore. At the confluence of the east and Hudson River is Governor's Island, distinguished by the circular fortress on its northern shore. Piers are numerous, the principal being the great pier of Jersey City, where the Cunard line of steamers lands its passengers, the Hoboken pier of the Hamburg and German lines, and the large piers on the Hudson River, where the Inman, White Star, Anchor, National and French lines land their passengers.

To give an idea of the extraordinary development of New York, I subjoin several dates which speak for themselves.

In 1653, the population was	1,120
1753           "           "	10,256
1800           "           "	60,000
1820           "           "	123,000



1840, the population was	312,000
1850           "           "	515,000
1860           "           "	813,000
1870           "           "	942,000
1880           "           "	1,200,000
1890           "           "	1,500,000

Very likely it will be over 2,000,000 in 1900, and there are no reasons why it should not continue to accrue in the same proportions, during the Twentieth Century. With Brooklyn, Jersey City, and Hoboken, which can be considered as parts of New York, the population exceeds 3,000,000. New York at first spread its streets and avenues in any direction that seemed most convenient, and the result was that the lower and older part of the city is more or less irregular. But when the City began to increase considerably, new streets and avenues were laid at right angles, and improved greatly the appearance of the City. North and South of the Island, there exist twelve fine and long avenues extending its entire length. Many others, although smaller, extend from West to East. Magnificent buildings have been erected along these avenues, and present a very imposing appearance which is not surpassed by the finest Boulevards of the principal Capitals in Europe.

The oldest and the most important one is the well-known *Broadway*, one of the finest thoroughfares in the world. It runs from the Battery to the Eighth Avenue and the 59th Street West. It ends at the Circle and at the Boulevard. Here is one of the entrances to Central Park. For nearly its whole length it is filled up with magnificent buildings and retail or wholesale shops, some of which are splendidly got up, and can compete with those of the Boulevards and Rivoli Street of Paris. In fact, Broadway is the centre of everything, Banks, Theatres, Hotels, Churches, are to be seen all along the route. Omnibuses, tramways, and vehicles of all descriptions are constantly passing by, and the animation which it gives to that fine thoroughfare is equal at least to that of Piccadilly, Strand, Holborn, and City in London; but the aspect of Broadway is infinitely better than that of these London thoroughfares in consequence of its width, which nearly equals that of the Paris Boulevards. The footpaths, which are wide, are crowded with people, day and night. The shops are very fine, the goods well exhibited, and thronged with lookers-on.

Among the many fine buildings fronting Broadway, I shall mention the *Post Office*, a magnificent building, the

largest of the city. It has a frontage of about 260 feet on Broadway; *Trinity Church*, opposite Wall Street. It has a tower 284 feet high, from which visitors can enjoy a very fine view; the *American Banknote Company*, at the corner of Liberty Street; the gigantic and splendid palace of the *Western Union Telegraph Company*, at the corner of Dey Street; *St. Paul's Chapel*, built in 1766; the *City Hall*, facing the south side of *City Hall Park*. It is a fine and imposing building of the Italian style; the beautiful and large marble building of the *New York Life Insurance Company*, one of the most successful institutions of that class in New York; the sumptuous hotels of *San Nicholas* and *Metropolitan*, the first on the east, and the second on the west. Both are first-class hotels, very large and with marble frontages, if my remembrance is correct. I have been staying in both. The price was twenty shillings per day, for a single room and board, but all first class, and with a very good service. Close by, is the *Grand Central Hotel*, and a host of others, just as large and fine, but too numerous to mention here.

Among the commercial houses, I shall mention the *New York Stock Exchange*, in Broad Street, *Kemp's Building*, *American Watch Company Building*, *Lord and Taylor's Store*, *Stewart's Store*, an immense iron building, *Deylin and Company Store*, *Sewing Machine Company*, *Tiffany and Company*, the well-known firm of jewellery and precious stones, *Arnold Constable and Company*, the great dry goods establishment, etc., etc. There are so many more that it is quite impossible to mention them in such a limited work.

The *Evening Post* and the *Staats Zeitung* buildings are also very fine, and the centre of great activity.

At 23rd Street, Broadway crosses Fifth Avenue and skirts one side of *Madison Square*, which is well supplied with trees and lawns, and one of the most attractive and striking features of New York.

From this point, Broadway continues to the Boulevard already mentioned. This Boulevard is a wide avenue continuing west of the city, and over the heights of the Hudson into Westchester County.

Before reaching the Boulevard many fine hotels are met with, the principal of which, is *Steven's Family Hotel*, a very large establishment, more like a palace than anything else. Further on, is the *Fifth Avenue Theatre*, the *Grand Hotel*, the *Wood's Museum*, the *Broadway Tabernacle*, a very

imposing structure, and lastly the *Circle Hotel*, which ends this remarkable thoroughfare.

Next to Broadway, the most important street is Fifth Avenue, extending over four miles in length, and entirely occupied with palatial private residences and hotels, among which are the *Fifth Avenue Hotel*, and the *Albermale Hotel*, frequented by the aristocracy. There are also many fine churches, art galleries, clubs, music halls, etc., etc. The most wealthy families have their costly or palatial residences here. That of Mr. A. Stewart is a large and magnificent marble palace.

Among the other fine monuments scattered everywhere in the city, I shall mention the *Cooper Union*, an Institute founded by the late Mr. Cooper for the advancement of Science and Art; the *German Savings Bank Building*, the *New York College of Physicians and Surgeons*, the *Hippodrome*, the *Grand Central Depot*, the *Columbia College*, the *Bible House*, the *Masonic Temple*, the *Metropolitan Museum of Art* at 128 west, 14th street, founded about 1874, which contains a very fine collection of paintings, drawings, works of art, and ethnological objects. In 1875, the Trustees of the Museum bought the celebrated collection of Antiquities from the Island of Cyprus, known as the *Cernolia Collection*, from its discoverer, at a cost of \$49,360.72 or £10,000. This interesting and magnificent Collection was in London in 1873-1874. The well-known firm of M. M. Feuardenet and Company had it exhibited at that time in their house in Great Russell-street, W.C., where I saw it. Afterwards during a visit that I made in New York in 1876, I had the pleasure to see it again in the Metropolitan Museum, where they made a grand show. My friend, the late Mr. Bland, a celebrated Conchiologist, who was for many years Assistant Secretary to the Museum, and who had assisted in the arrangement of the collection took me there, and I spent several agreeable hours in admiring again these beautiful statuettes, heads, vases, etc., quite unique in their way.

If I remember well, the British Museum had the first refusal of this Collection, and I have always wondered why it had not purchased it. Lastly comes the *Menagerie*, and the *Natural History Museum of New York* in Central Park; the great pleasure ground of New York. Lately, great progress have been made in the Menagerie and in the Museum, and both are taking a front rank amongst the Zoological Gardens and Museums of America. Since the



purchase of the well-known collections of bird skins, made by M. M. *Elliot* and *Lawrence*, this department is acquiring a great reputation among Scientists, and no place could be more convenient than its present location in the magnificent grounds of Central Park. The site of this park, which on my first visit to New York, was one of my hunting grounds for collecting Insects, occupies now nearly the centre of the city, so it is easy to have an idea of its extension on that side since 1853.

It is impossible to give a full description of all its beauties; but I remember that in my last visit, in 1877, it was one of my daily excursions, and I passed many agreeable and useful hours in the grounds.

The length of the park is about two-and-a-half miles by half-a-mile width. It contains about 862 acres of lawn, garden, wood drives, footpaths, etc., with a very fine lake and brook. It takes about half-an-hour to row round the lake.

There are carriages running at frequent intervals round the park. It takes about one-hour-and-a-half to make the entire circuit, and it costs one shilling.

There are fifteen miles of carriage roads, eight miles of bridle paths for riders, and over twenty-five miles of walk.

It is extremely picturesque, the engineers having made good use of the rough hills and tangled woodland which originally stood there.

By walking, all the sights are better seen, the bridges, the belvedere, the cave, the springs, the lake, the hills, all are worth seeing. Dairy, Restaurant and Casino have been built inside the park, and are very well patronized, as also the Carousel, where are swings and all sorts of amusements for children.

One of the peculiar features of New York, which attract more especially the attention of the European, are the railways running parallel to the streets. They are in New York what the Metropolitan underground railways are to London, excepting that the latter ones run underground, while those of New York are constructed in the streets at the height of the first floor. They are running frequently and always full, and they must certainly be an annoyance to the dwellers of the houses situated along their route.

I passed two "Fourth of July," the anniversary of the Independence of the United States, in that country.

If not seen, it is impossible to have any idea of the

animation and excitement occasioned among the people by this event. From the end of June to the 4th of July, it can be easily seen that something unusual is going to happen. Numerous sandwich men are seen in the streets with circulars on their backs, informing the public where the best flags and crackers can be bought. The sale of these goods is fabulous during several days. On all sides are seen men and children carrying flags, banners, and crackers. On the 3rd of July begins the decorations of houses. All the flags of the world, but more especially that of the United States, are displayed with such profusion that nothing else can be seen. From one street to another not a single space remains without a flag, banners cross the streets from one side to the other. It is by hundreds of thousands that they are seen, and the houses disappear entirely under this exuberant display of flags of all colours. The next thing is the Torch-Light Procession, which always takes place on the night of the third of July.

All the windows of the houses are crammed with spectators, eager to see the procession, and many are those who cannot secure a place for that purpose.

At about 10 p.m. the procession, composed of many thousands of people, bearing torches, Chinese lanterns of all colour and descriptions, flags, banners, etc., begin their march, of which the itinerary is known by all, beforehand.

The procession usually lasts from twelve to one or two in the morning, and for hours you see them pass by, Societies with their banners and cars, Soldiers, Members of Clubs, Citizens of all descriptions, women, children, masks, fancy dressed people, including even representatives of wild Indians, all of them with their bands of music, follow one another, and all the while Bengal fires are lighted in the corners of the streets, pistol shots are freely fired, rockets and crackers are fired in all directions, without caring where they go, and what mischief they may cause. Add to that the continuous vociferations and hurrahs of the spectators and of the members of the procession, and you will have a feeble idea of what a Torchlight Procession is in the United States. Europeans especially Italian and French cannot have a better idea of what it is than by supposing that they assist at a *Monster Carnival*, with the addition of shots, fuses, and crackers fired at random in all directions. How many hundred weights are fired in the United States during the third and fourth of July every year.

would be an interesting problem to solve. Of course many accidents always take place at these times ; but that does not count for anything. The next celebration will be even more animated than the preceding one.

On the 4th, the celebration is more solemn, at least in that part of the town where the official ceremony takes place, and to which assists the President of the Republic, the Senators and deputies, high dignitaries, the Diplomatic body, and a very large number of guests. There is always an address read, a prayer said, a lecture of the Declaration of Independence, poetry recited, speeches made, good music, and everything done according to programme. It is really grand and imposing. Meanwhile the citizens continue their monster processions through the town, shooting, firing their guns and pistols, fuses and crackers, eat, drink, walk, congratulate themselves, and make such an infernal disturbance during the whole day and night, that those who have delicate health must be sure to go away from the city a day or two before, if they wish to escape madness.

The day ends with many private and official fireworks, illuminations, Bengal fires, and the like.

In a certain way this celebration of the day of independence is a very good thing. All men require holidays and changes, and what day could have been better chosen than this, the day which made them *all free*.

During the elections, which take place every four years, and lasts several weeks, processions with all sorts of flags and banners, with their bands of music, decorations of houses, etc., are indulged in as on the fourth of July, with the only difference that sometimes two rival processions meet, and a free fight takes place ; but of late it has seldom come to that.

As soon as the nomination of the President is made, all is quiet again, and everyone returns to his occupation. Although it is expected that all the offices will be given to the supporters of the new President, it is accepted by all as an accomplished fact without mental reservation.

The citizen who was yesterday a President, a Minister, a Postmaster, etc., will return to his ordinary occupation, and will be replaced by the new one.

I only wish that in Europe, in Central and in South America, and in other parts of the world, all those who occupy governmental offices had the same philosophy.

Fires used to be frequent enough during my stay in New York, and have contributed to the formation of several brigades



of Firemen, who are always ready to reply to the call of the fire-bell.

This useful institution consists of Volunteers, who buy, not only their uniforms, but also the fire engines with all their accessories, and keep them in the very best order. Some of their engines are golden outwardly, and shine brightly. There is a keen competition between the several brigades to display the best horses, best engines, best of everything, and this competition is not only seen in these displays, but also in their splendid way of extinguishing fires.

In 1853, there were six distinct companies of firemen, all rivals. As soon as the City Hall bell was heard, it was a positive contest between all the firemen to be the first in bringing their engines to the scene of the fire, and to attack it strenuously, and generally with success.

This rivalry between the firemen in such circumstances is a fact worth imitating in other countries. In 1853 they had no horses, so they had to drag the fire engines on foot.

In the greatest heat of the summer, or in the bitterest cold of the winter, you could see them always running and dragging their machines at a prodigious speed. The only distinction in their costume was a woollen red shirt, and a broad, varnished tin helmet. It was a point of honour between the various Companies to arrive first on the scene of the fire and to extinguish the same before the others arrived.

At night, the sight of the firemen is worth seeing. Each company is preceded by several tall fellows bearing lighted torches. One in the middle has in his hand a large speaking trumpet, with which he continually encourages the men by energetic shouts of "*Go-ahead! Go-ahead!*" which at the same time serves as a warning to the crowd to keep the place clear.

The running of these red costumed men drawing their engines at full speed, the lighted torches, the blowing of the trumpet, and the vociferous cries of *Fire! Fire!* by the crowd who run behind the firemen, the fire itself, the whole thing has an extraordinary aspect well worth seeing.

The crowds as a rule are very well regulated, and, if necessary, help as much as it is in their power to do; and as soon as the conflagration has been put out, many are the hurrahs in favour of those who have distinguished themselves.

If salvage of people has taken place, those who have done these more or less heroic actions are applauded in the most vigorous manner, and in all the morning papers their

praises and names appear in big letters and they are the heroes of the day.

Of course these institutions are supported by many philanthropists, and gifts of all descriptions are occasionally sent to them. They are very useful bodies of men, and it is considered a great honour to belong to one of them.

Of places of amusement, there are about forty between Theatres, Music Halls, Hippodromes and others, the principal being the *Grand Opera House, Fifth Avenue, Lyceum, Metropolitan, Olympia, Niblo's Theatres*, etc. The Niblo's Theatre is attached to the *Metropolitan Hotel*, so that you can go from one to the other without going out. The last time that I was in New York, I went there and saw a very good comedy, entitled "Our Poor ; or the Poor of New York."

It is needless to say that Americans are very fond of theatres, and they manage to attract in their country all the artistic stars, which they pay liberally. Patti, Irving, and many other artistic celebrities have made long stays in the United States. Americans are also very fond of lectures, and a good lecturer is certain to make a rich harvest.

One of those who has been very successful that way is the celebrated *du Chaillu*, the well-known African Explorer.

They are also great readers of newspapers, and all sorts of literary works. The large number of daily, weekly, and monthly papers that are printed in the United States is quite astonishing. In New York alone they exceed one hundred, among which are the well-known *Evening Post*, the *Daily Express*, the *Daily Tribune*, *Daily Times*, *Daily Sun*, and the famous *New York Herald*, so well-known in Europe since Mr. Bennett, regardless of cost, sent Stanley in Africa with the special mission of finding the great *Livingstone*.

As to *Commerce and Industry* I shall say little, because it is a well-known fact that that it is so enormous, that all the other nations do not know what to do to keep their supremacy. The Americans are so industrious, and so quick in finding the merit and utility of new inventions, that no time is lost in the manufacture of new machines and their application to industry, and they will soon contend successfully with similar articles of European make. Even at this moment Paris and London stores are crowded with American machines of all descriptions. As to natural products, Europe would famish if it were not for the corn sent from that country.

Cotton, sugar, pork, meat, are amongst the principal articles of exportation. In consequence of its great area

of territory comprising all the climates, from very hot, as in Louisiana and Florida, to the extreme colds of the Northern States, America can grow everything in its own territory, and can dispense entirely with all the commodities of the rest of the world. This is an immense advantage for that country.

In New York, the summers are excessively hot, and many are the deaths produced by sunstrokes. In winter the cold is sometimes very hard to bear, and lasts long; but nevertheless, the climate may be considered as very healthy, especially for persons who inhabit the central and northern parts of Europe.

Its population is cosmopolitan, English, especially Irish, German, Italian, Spanish and French, being the more conspicuous. In fact, we may say that the *North American* belongs to a new race, formed by the mingling of nearly all the European races, and what is very remarkable, is the type of this new race, by which, it can be easily recognised anywhere.

This mingling has produced a robust, active, intelligent new race, better fit to resist the struggles of life than the old ones.

Even the first settlers change in manners and character after a stay of some years in that free country. Their children are not recognisable, and the second generation constitutes the new race. I believe that this is due, not only to the distinct mode of living, the different climate, but also partly to the institutions of the country, which contribute greatly to the development of the active faculties. The same thing is going on in Australia; and I am certain that is also due to the same causes. In the old European and Asiatic countries, these modifications would require a much longer time, which somewhat tends to prove that without liberty, the progress and development of the active faculties in men is slow.

The French, Italian, and Spanish usually live near one another, the Irish are not very far off, and the Germans have also their special quarters, so that it is very amusing, when walking about, to hear all the principal European languages spoken there. But this lasts only for a time. It is true that these parts of New York are always occupied by the same representatives of these nationalities, but most of them are new arrivals. After a time, if they remain and marry in the country, the evolution soon takes place, and they



become *Americans*. It is all these people who have made the *United States* what it is, one of the first countries of the world, and it is for that reason that I believe that it is wrong to stop the emigration of Irish, Italians, or others as they have done lately. You can never know if amongst these paupers of to-day, may not be present some members who, at a given time, will contribute to the greatness and prosperity of their adopted country.

The United States possesses immense territories, where hundred of millions can live easily. Therefore it would be much more rational that the American people, some of whose ancestors were in no better position, when they arrived in that wonderful country, than the new emigrants, should assist in every way in their power, with money and otherwise, all those who emigrate to their country. It is a sort of merchandise which has no market value, and when wanted, it cannot be had at any price; the Central and South American Republics would give much for such a supply of voluntary emigrants in their countries. The fact alone of having selected the United States as the place of their migration speaks in their favour. If they have done so, it is because of the great fame that the United States have in Europe. They consider it as the *free country* open to all.

Possibly among these pauper emigrants may be found some bad seeds of no value to the country, but they are sure to disappear quickly, and only useful members will remain.

In a country like the United States bad seeds cannot prosper, the competition is too keen, and only the more active and industrious succeed.

If I am permitted to give my humble advice to the great country, I shall say to its inhabitants:—

Do not make any distinction between rich emigrants or paupers who select your country as their own. Receive them all alike and with kindness. The rich ones, help them with your experience; the poor ones, help them with money and clothes. Send them to the West, grant them lands, supply them with all the requisites necessary for them and their families, to keep their lives and spirits in good condition, until they can subsist by themselves. By so doing, you will benefit them and yourselves. In due time, these families, in one way or another, will repay you fully the kindness lavished upon them, will become faithful American citizens, and will contribute to the further development of your grand country.

Another advice, which I shall take the liberty to give to

the North Americans, and to all others who may care for it, is that *Free Trade* ought to be the motto of all its inhabitants.

Excepting *Spirits, Tobacco and Cards*, or the like, which ought to produce enough to defray all the expenses necessary to the development of the country, and for maintaining internal peace and order, all the rest ought to be FREE. Even Justice ought to be free, the salaries of Judges, Barristers, and others, paid from the revenues produced by the three above-mentioned dutiable articles:

*Everything free*, excepting those three articles, which are *luxuries*, and from which all the sums required for the administration of the Government ought to come. *It is a trial well worth making, by the great American nation.*

I am perfectly certain that all those who smoke, drink, or gamble, would submit to the change with good grace. Even if the price of these commodities was forcibly raised, these persons would still be benefited by it; because if the sale of these commodities was made by agents of the Government they would be more certain to get a better quality for their money, than what they get at the present moment.

There is also another American question of great interest; that of the Indians, the former possessors of the soil. I think that all means ought to be taken for the education and preservation of what remains of this interesting race of people. By experience I know that these pure Indians possess many good qualities, and if instruction was freely given to them, it is probable that they could fill with honour and merit the most exalted positions. *Benito Juarez*, a pure Indian, born in *Istlan* or *Villa Juarez*, a small mountainous town at about thirty miles from Oaxaca, from pure Indian parents, can be cited as an example. *Don Porfirio Diaz*, the clever President of the Republic of Mexico, is another. *Mejia*, the celebrated faithful General of Maximilian, was a pure Indian. Hundreds more of eminent men, dead or alive could be mentioned; but these three are sufficient, and no reasons exist why a great many more of them should not turn out so. Therefore, as I said before, everything ought to be done to educate the children of these Indians at the cost of the country, for their benefit, as well as for that of the country.

Now I shall leave these digressions, and return to my general subject, that of New York.

What attracted my attention in that city, was the large number of *Bar rooms* which exist in all parts of the city. I

was quite surprised to see that in all these places, many dishes containing bread, cheese, pickles, and other articles of food were placed on the counter.

I saw the people freely partaking of them without any payment asked. I inquired how it was, and the reply was that it was the general custom to do so, and that it was a lure to excite customers to drink. Nevertheless many had the habit to have a good lunch at a cost of a few pence, for the glass of beer or whiskey in which they indulged at the time, and I thought that it was not such a bad thing for the poor.

In 1854, there was a Great International Exhibition in New York. If I remember well, the Exhibition took place in a fine Crystal Palace somewhere, where now stands CENTRAL PARK. I have still in my possession a water colour of the Palace. Many times I went there. The price was fifty cents. Being the first International Exhibition that I saw, I was much delighted with the innumerable good works of arts and industry which I saw there. The machines, which were also very numerous, attracted my attention. Many new ones were exhibited. One of them, a miniature electric boat, exhibited by a Frenchman, Mr. Vergès, was one of the greatest attractions. It was exhibited in the middle of a small artificial lake, and every day the inventor worked his model round the lake as long as he wished. It was considered a great success, and I believe that a Company was formed for the building of a real ship, which was done in due time; but the results were not quite satisfactory, and it was abandoned. However, the idea has not been lost, and electricity is now used as a motor for steamers and for many other purposes. The same inventor also established some electric baths as a remedy to nervous diseases, but it also turned out a failure.

I visited also the Barnum Museum. At that time it was not what it has been afterwards; but, nevertheless, it was very interesting. It contained a large menagerie, collections of natural history, Mammals, Birds, Reptiles, Insects, and the like; also a fine collection of Chinese curiosities. The price of entrance was one shilling. Attached to the Museum was a theatre, for which an extra fee had to be paid.

From that time to his death, Barnum, of celebrated memory, augmented his Museum and Menagerie in a remarkable manner, and made a large fortune. Several times the Museum was burned; but shortly after a new and larger



one was rebuilt. Everyone in London will surely remember his visit to that city.

I also made the acquaintance in New York of the world-renowned celebrated artist, *Madame Adelina Patti*. At that time she was a charming young girl, aged twelve, and was already known as a great pianist. She had the fresh voice of a nightingale and was very much courted for private concerts. Great expectations were expected from her, which have been fully realized as everyone knows.

I had the pleasure to hear her very often, and, of course, I appreciated and enjoyed immensely the hours spent in her company. Later on, I have enjoyed many charming soirées in Paris and in London, where I saw her in all her principal characters, in the *Somnambula*, *Marta*, *la Traviata*, etc., etc., but I never forgot the happy time of our first acquaintance.

In my several visits to New York, I visited all the Museums, I assisted to the meetings of several scientific Societies, either at New York or in Brooklyn, and I made the acquaintance of many good men. *Professor Schaup*, Entomologist, *Mr. C. Bland*, Conchiologist, *Mr. George Lawrence*, Ornithologist, *Captain Dow*, Explorer, *Professor Baird*, and many others, with whom I have passed some delightful hours.

I also made the acquaintance of many dealers in objects of natural history, *Bell*, *Wallace*, and several others in New York, *Akhurst*, in Brooklyn, *Alexander* in Hoboken; and I made some valuable purchases in bird's skins and insects in their stores. I secured some rare species of birds from Ecuador and British Guiana; also some very rare Coleoptera from Columbia.

In the vicinity of New York I collected many insects and a few birds, among which, the beautiful humming-bird, *Trochilus colubris*, a very important species so far, as being the one on which the genus, *Trochilus*, of Linné, is based, which has been employed by Naturalists for the family of TROCHILIDAE, and which I have also employed for my order TROCHILI, for these birds.

It is a beautiful creature, only  $3\frac{1}{2}$  inches in length, bronzy-green on the upper surface, with the chin black, the throat metallic ruby-red, and the rest of underpart white. It has been put in five distinct genera, but is now universally known as *Trochilus colubris*; *Red-Throated Humming Bird*, and *Red-Throated Honey Sucker*, in English, *Rubis*, *Petit Rubis*, *Petit Rubis de la Caroline*, etc., in French. Its nests are in the neighbourhoods of New York.

In the centre of the city is Union Square, a lawn enclosure shaded by trees. Here the great attraction was the large number of English sparrows imported a few years before 1852. These birds have propagated so rapidly, that I think they are considered now as a nuisance, but at that time they were the pets of the New Yorkers, who had small wooden boxes fixed to the trees, for their special use. In several parts of the country I have seen similar boxes, but larger, fixed on trees, for squirrels.

Many were the excursions that I made during my stay in New York.

*Brooklyn*, usually called the *City of Churches*, was the first that I visited. Ferry boats are constantly crossing from New York to Brooklyn. It is a matter of several minutes, and the cost is one penny. These boats are very large, the centre is reserved for cars, carriages, and horses. Two lateral galleries with benches run along the sides, and are reserved for pedestrians. One of them is reserved for the special use of ladies.

Brooklyn is a large town, which now contains over 900,000 inhabitants. In 1853 it was the meeting place of the Irish, and I have witnessed several fights between many thousand of them, and as many Americans.

Many churches and cemeteries exist in Brooklyn. The United States Navy-yards, Barracks for the Marines, and Hospital are also situated here. It is the residence of many merchants of the City, also of many Germans and Irish. Numerous detached Villas, built in the English fashion, are seen in all directions.

*Prospect Park* is a fine ground, well laid and much frequented.

Another favourite place where I went fishing, was *Governor's Island*, not far from the Battery. Fort Columbus, Castle William, Fort Lafayette, and Fort Richmond are all built on this Island, and defend the entry of the bay.

On the other side of the port, or Hudson River, are the two large connected towns of Jersey City and Hoboken, which in 1853 were only small villages.

Ferry boats take you there in about twelve minutes, and start every fifteen minutes. The fares are very cheap, averaging one-and-a-half pennies. These annexes of the Imperial City are increasing prodigiously, and are beautifully laid out. They are great resorts for holiday makers. On Sundays, the ferry boats are crowded with passengers. Many

other neighbouring places can be reached by these boats: *Astoria, Bay Ridge, Blackwell's Island, David's Island, Greenpoint, Harlem, Hart's Island, Hunter's Point, Randall's Island, Staten Island, &c., &c.* Charming excursions can be made in all of them, and the scenery is very picturesque, but the best of all, is to ascend Hudson River as far as the precipitous rocks known as the *Palisades*. It is a delightful trip. I remember an excursion which I made on the river in autumn. It is impossible to describe adequately the wonderful aspect of the trees on the margins of the river. What a variety of colours, with their foliages, from dark green to gold and silver. When lighted by the sun, the aspect of this autumn vegetation is fairy-like. The boats which ascend the river are large, comfortable, and magnificently ornamented. A very good restaurant is installed on board, and supplies excellent dinners. Bands of music play alternately, and dances are improvised. In fact, they can boast of all the comforts unimaginable for passengers, and I have never seen the like in England or in France.

At night, the aspect of these boats ascending or descending the rivers, with all their windows brilliantly lighted, the bands of music playing, the young folks dancing, is so beautiful, that they leave a most pleasant and never-to-be-forgotten impression.

From all that precedes, it may be supposed that life is very expensive in New York; but it is not so. Many are the second-rate hotels, very good of their kind, kept by French, Italian, German, and others, where board and food can be had from four to six shillings a day. They are much patronized by persons of these nationalities, and are sometimes preferred for their cooking to the most expensive.

Now, if you live in your own house you can do so, at a moderate price, provisions of all kinds being usually abundant and cheap. You can enjoy all the luxuries of life with about the same income as that required in Europe. Some things may be somewhat dearer, but it must be remembered that the wages are also higher than in Europe. A good workman will always command wages from two to four dollars per day. One dollar is usually paid to new or inferior workmen.

In the streets, it is impossible to distinguish a manual workman from a lawyer, banker, merchant, or the like. All of them dress with frock coats and chimney-pot hats, as they are called in London.

In the offices, or yards, they don their work clothes.



When their work is done they leave these in the offices, or workshops, wash themselves, and put on their frock coats and hats. I do not mean to say that there are no exceptions, but then they are new arrivals, passengers, or vagabonds. Of these last, many are to be seen in New York as anywhere else ; but it is due chiefly to their idleness, and I advise all travellers to let them alone. It is not prudent to make any acquaintances in the street.

The aspect of the City on week-days is that of febrile activity, resembling somewhat that of the City of London. Everyone seems to be very busy, and running more than walking. Even in *Broadway*, the traffic is so dense, that the loungers cannot stroll about at will. Now with the men or women offering their ware for sale, the cries of the newspaper boys, the clerks hurrying on their errands, and not caring whom they jostle, it seems as if you were in a City inhabited by madmen, and if you do not keep your eyes wide open, a knock-down, or the loss of some objects of value will be probably your fate.

## CHAPTER XIV.

IS AMERICA part of the ATLANTIS of the Ancients? — The first European Discoverers of that Continent—Prophecy of TASSO of the Discovery of America by CHRISTOPHER COLUMBUS—European Expeditions in North America—Discovery of *Labrador* by SEBASTIEN CABOT—*John Verrazani*, the first Discoverer of *North Carolina* and the harbours of *New York* and *Newport*—Discovery of *Virginia* by Captain *Philip Amidas* and *Arthur Barlow*, acting for SIR WALTER RALEIGH—Colonization of *North America* by the ENGLISH.

**I**S America part of the Continent known by the Ancients as *Atlantis*, or is it a separate Continent? To that question it is impossible to reply satisfactorily, and it is also very difficult to say if *America* is a very old Continent, or was formed later on, than the one we know, as *Europe*, *Asia*, and *Africa*. But many geological facts tend to prove that if *America* is not entitled to be called *the Old Continent*, it is unquestionably as old as the other one, and the name of new Continent can only be applied to it, with the meaning, that its discovery is relatively new to Europeans, Asiatics, and Africans.

Many are the probabilities that the actual America formed part of the *Atlantis*, or was at least very close to it, and that communications existed between the two.

Many are the suppositions that have been made about that wonderful part of the World.

The Reverend Father Charlevoix thinks that Noé himself landed in America. Old Spanish authors were of opinion that the fleet, which brought a rich cargo of gold to Palestine in the year 996 before Christ, had come direct from the Island of *Santo Domingo*, the same island that *Christopher Colon* discovered in 1592, and which he thought was the OPHIR OF SOLOMON.

Seneca himself, one of the great philosophers among the Ancients, in one of his writings, made the following remarkable prediction :—

. . . Venient annis.  
 Saecula seris, quibus Oceanus.  
 Vincula rerum laxet et ingens.  
 Pateat tellus, Typhisque novos.  
 Detegat orbes nec sit terris.  
 Ultima Thule. . . .

(Medea).

"One day will come, after many centuries, when the Ocean, breaking its bonds, Typhis will show to men a new universe, then Thule will be no more the last land found in the West. . . ."

What a singularity that the name *Thule*, cited by Seneca, should coincide so well with the celebrated *Tullan*, or *Tula*, founded by the great *Quetzacoatl* of the Mexicans, and adored by them as a god after his death. If Seneca meant *Iceland*, by *Thule*, which is always the traduction given of it, it is not less singular that the Islanders have also been considered as the first European discoverers and settlers of North America, and what is more natural that they should have been the builders of that celebrated city of *Tullan*, or *Tula*. Now the *Chinese* also claim to be the discoverers of *America*. One of their historians, *Vossius*, mentions the fact in his writings. Nothing more easy, when we consider that they knew the compass 150 years before our Era.

Then, if we come to epochs nearer to us, we have positive dates about the voyages made to several parts of North America by *Leif*, son of *Erick the Red*. This was at the beginning of the eleventh century. He and his brothers discovered several countries, which they named *Helluland*, *Markland*, and *Vinland*.

The widow of *Thornstein*, the third son of *Erick the Red*, married a rich *Iceland* merchant, and went with him to *Vinland* in 1007.

In 1112, *Erick Upsi*, was nominated Bishop of *Iceland*, *Greenland*, and *Vinland*.

Up to 1347, constant communications existed between these countries, but in consequence of the cholera, which reduced the population of Norway from two millions to three hundred thousand inhabitants, the emmigration to the new countries ceased entirely, and the communications between them stopped; but the tradition of these lands was faithfully kept by the *Norwegians*, as mentioned in the SAGA OF KING OLAUS.

In 1570, *Madok*, Prince of Wales, son of the King *Owen Guyneth*, after the death of his father, threw up his share of succession, made several voyages of discovery, and landed in America. He established a colony at ACAZUMIL, supposed to be situated somewhere in the north of America.

In 1390, according to *Matthias Quadius* and *Antonio Maginus*, two historians of the epoch, *Antonio Zeno*, a patrician of Venetia, is said to have landed in that part of



America known as *Labrador*. It was inhabited by people who traded with Greenland and Iceland. They sowed corn and made beer. There is a tradition that they had some knowledge of the latine tongue, and that several books in that language were found in the library of one of their kings.

The *Basques* and *Bretons* have also been considered as frequenters of North America at about the same time.

Now, I quote under, the following stanzas of TASSO, in which, speaking of Hercules, he prophesies the discovery of America by Christobal Colon :—

*Non oso di tentar l'alto Oceano  
Segnò le mete en troppo breve chiostri,  
L'ardir ristrinse dell'ingegno umano,  
Tempo verra che fian d'Ecole i segni  
Favola vile ai naviganti industri  
Un uom della Liguria, avra ardimento  
All'incognito corso esporsi in prima.*

Tasso xv. 25, 30-31.

It is impossible to name *Christobal Colon* more explicitly than this.

In August, 1492, Christobal Colon embarked at Palos (Spain), and on the 12th of September of that year discovered *Hayti*, one of the islands of the Antillae.

That great discovery, which revolutionized the world, was considered of such importance that Spain, Portugal, France, England, Holland, and other countries sent numerous expeditions to the Continent discovered by Colon, and called *New World*.

CABOT, VESPUCCI, PINZON, NIÑO, CORTEREAL, HOGEDA, NICUESA, ANCISUS, COLMENARES, PEDRARIAS DAVILA, NUÑEZ, FERNANDEZ, CAIZEDO, MORANTES, IGNIGUEZ, GRIFALVA, PONCE DE LEON, MAGAGLIAN, CORTEZ, ALVARADO, QUARTIER, GUTIERREZ, PIZARRO, ALMAGRO, RIBALD, FORBISHER, DRAKE, CANDISH, SMITH, RALEIGH, MAHU, CORDES, HUDSON, SPILBERGEN, CORNELISZON, LEMAIRE, L'HERMITE, SCHAPENHAM, BREWER, and many others, explored AMERICA, and contributed greatly to our knowledge of that Continent.

Among all these distinguished travellers, SEBASTIEN CABOT is the one mentioned by all authors as the first who landed on the coast of Labrador (North America), on the 24th June, 1497; but it must always be remembered that LIEF ERICKSON visited that land five hundred years before.

The claim of England to her North American possessions

is founded upon Cabot's discoveries. These discoveries of Cabot induced the King of Portugal to send an expedition of discovery to America. The command was given to GASPAR CORTEREAL, from the Azores. This was in 1500. *Cortereal* explored the coast of *Labrador*. From a second voyage, which he made in 1501, he never returned.

In 1508, a mariner of Dieppe, Aubert, sailed to Newfoundland and brought home with him a native of that country, who was presented at the Court of France.

In 1524, John Verrazani was sent to America by *Francois Ier*. He reached the shores of *North Carolina*, and coasted north to the latitude of fifty degrees, exploring on his way the harbours of NEW YORK and NEWPORT. THEREFORE HE MUST BE CONSIDERED AS THE FIRST DISCOVERER OF THAT PART OF AMERICA.

In 1534, JACQUES CARTIER, or QUARTIER, explored the coast of Newfoundland. In 1535, he entered the gulf of St. Lawrence, and he may be considered as the DISCOVERER OF CANADA; but the first that made an effective settlement in that country was SAMUEL CHAMPLAIN.

The settlement of *Nova Scotia* was made by Mr. DE MONTS, who founded *Port Royal*. The first expedition to *Florida* was made by PONCE DE LEON, in 1512. He was appointed by the Emperor, Governor of that country.

After him, PEREZ DE ORTUBIA, VASQUEZ DE AYLLON, PAMPHILO DE NARVAEZ, ALVARO NUÑEZ, FERDINAND DE SOTO, and TRISTRAN DE LUNA, also visited Florida. They fought many battles with the Indians, and sustained considerable losses, resulting in the abandonment of the country for a considerable period, during which the French made repeated attempts to form settlements on the western coast. RIBAUT built the fort of Carolina on the site of Port Royal, and found the Indians peaceful and ready to help him. Under the reign of the SPANISH KING, PHILIPP II., *Pedro Malendez de Avila* was sent to dispute the possession of *Florida* to the French. He commanded a fleet of eleven vessels and 2600 men. He sailed from *Cadix* the 29th of June, 1565, and succeeded in recapturing Florida.

The Spaniards were then the only occupants of American soil, but the English had not abandoned their claim, founded on the discovery of Cabot.

In the reign of HENRY VIII., *Mr. Robert Thorne*, a Bristol merchant, left the Thames on the 20th of May, 1527, but nothing came out of that expedition.

In 1536, another gentleman named Hore was not more successful.

In 1553, *Sir Hugh Willoughby*, commanding three ships, sailed for America, but with the exception of the ship commanded by the pilot, *Richard Chancellor*, they all perished miserably from the effects of cold and hunger on a barren and uninhabited part of Lapland.

*Richard Chancellor* was more fortunate, and reached Archangel, from whence he went to Moscow, in Russia, and returned to England.

*Forbisher* was the next who sailed on the 11th of July, 1576, and reached Labrador, where one of his seamen discovered gold accidentally, and was the means of inciting the Government and private individuals to undertake new voyages of discoveries.

*Forbisher* undertook several voyages, more in search of gold than for making new discoveries; but he did not succeed. Later on, he accompanied *Drake* in his expedition to America and round the world.

In 1583, *Sir Humphrey Gilbert* sailed with five ships, and reached *Newfoundland* on the 30th of July. On entering *St. John*, in the Queen's name, he took possession of the harbour and two hundred leagues each way, and he established a sort of colony there. Then he proceeded on a voyage of discovery to the south; but he never reached England again. Near the Azores his small frigate, the *Squirrel*, and all within, were swallowed up by the sea, and never more heard of.

In 1584, *Sir Walter Raleigh*, a relative of Sir Humphrey, procured the renewal of the patents conferred to Sir Humphrey by QUEEN ELIZABETH, and sent out two ships, commanded by Captains *Philip Amidas* and *Arthur Barlow*, for the purpose of discovery. They discovered a new land, on the coast of Florida, which was named VIRGINIA, in honour of QUEEN ELIZABETH, and a colony was established there, but nothing came of it.

The next attempt at colonization was made by *Captain Gilbert* in 1602. He reached the northern part of Massachusetts. He continued southwards and came to a promontory, which he named *Cape Cod*. More south, he arrived at a point which he called Gilbert's Point, and he discovered an Island which he named *Elizabeth's Island*, in which he built a house and a fort, leaving twenty men there; but they soon abandoned the place and returned to England.



In 1605, the EARL OF SOUTHAMPTON and LORD ARUNDEL equipped a ship and sent her to New England, under the command of *Captain George Weymouth*. He explored the coast from the *Penobscot* to the *Hudson*. Not far from the mouth of the latter river, he entered a good harbour, which was called *Pentecost Harbour*. He then returned to England.

The colonization of North America by the English commenced in the beginning of the seventeenth century, under the reign of JAMES I. *Hakluyt*, *Sir Ferdinand Gorges*, *Sir John Popham*, and *Captain John Smith*, were all, and at the same time, directing their efforts to the same object. They united together, inviting others to join them in petitioning the King for a patent to raise a Company for the settlement of colonies in *Virginia*.

This petition was favourably received, and on the 10th of April, 1606, letters patent were issued, granting them all the territories in America lying on the sea coast between the 34th and 45th degrees of latitude. The patentees were divided into two companies, the southern comprising Londoners, and the northern composed of adventurers from Plymouth and Bristol.

The London Company fitted three small vessels, under the command of *Captain C. Newport*, who sailed on the 19th of December, 1606. The squadron, after four months' voyage, was driven into *Chesapeake Bay*. Here he discovered and named Cape Henry. After coasting about for some time, they entered a river, called by the natives *Powhatan*. They made a settlement there, which they called *Jamestown*, in honour of their King. This town is the oldest English settlement in America.

Captain Smith, one of the adventurers, a member of the Council of Administration, and whose name will ever be associated with the establishment of civilized society in America, descended from a respectable family of Lincolnshire, and was wealthy. Entering upon the direction of affairs he fortified Jamestown. Supplies being cut off from England, and the savages refusing to supply them with more, he put himself at the head of a company of his people and advanced into the country. By his affability to the well disposed tribes, and by repelling vigorously the others, he obtained abundant supplies for the colony. But in the midst of his success he was made prisoner, and would have been executed by the Indians if it had not been for *Pocahontas*, the King's

favourite daughter, who threw her arms round the prisoner and declared she would save him or die with him. Smith was released and returned to Jamestown.

After a certain time spent in discoveries and visits in every inlet and bay, on both sides of the Chesapeake, from *Cape Charles* to the river *Susquehannah*, he came back, bringing an ample and accurate account of his researches, and a map which has been the groundwork of all posterior ones.

By his liberality, wisdom, and courage, Smith inspired the Indians with the most exalted opinion of himself and of his country.

Subsequently, he received a dangerous wound from the explosion of some gunpowder, which obliged him to proceed to England for surgical aid, and he never returned to Virginia; but the honour of having been the true leader who planted the Anglo-Saxon race in North America rests with him.

From 1610 to 1756, the colony continued to grow, favoured by several circumstances, as the increasing use of tobacco in Europe, its remoteness from the Spanish and French settlements in Florida, and in Canada, and its central position, which protected it from savage incursions. The soil being fertile, the natural productions, both animal and vegetable, being abundant, and the means of existence easy, the people enjoyed unusual prosperity. The same can be said of the English settlements of MARYLAND, MAINE, NEW HAMPSHIRE, MASSACHUSSETTS, PROVIDENCE and RHODE ISLANDS, CONNECTICUT, etc.

## CHAPTER XV.

First Settlements in *New York* by the DUTCH—Wars between the DUTCH and the ENGLISH—Old Description of NEW NETHERLAND and NEW AMSTERDAM—Of the Country and its Natives—Inhabitants—Their Customs—Vegetable and Animal Life—Mineral Ore—Definitive Occupation of NEW NETHERLAND and NEW AMSTERDAM by the ENGLISH—War of Independence—Treaty of Peace signed by the ENGLISH and the NORTH AMERICANS—Declaration of Independence of the UNITED STATES—GEORGE WASHINGTON elected *President of the United States*.

THE first who entered the harbour of New York was *John Verrezani*, in 1524, as I mentioned before. In 1609, *Henry Hudson*, an Englishman, in the service of the Dutch East India Company, sailed from the Texel in the frigate, *Half Moon*, with instructions to seek for a passage from America to China. He landed first at *Newfoundland*, and from that place, he continued southward and arrived at a great river (the Hudson of to-day), which he ascended to a good distance. On its banks, he met some men robed with buffalo skins. From there, he returned safely to Amsterdam.

The narrative of his expedition determined many Dutch merchants to prepare several expeditions, with the object of establishing firm settlements in that part of America, for which purpose they obtained letters patent in 1614, granted to them by the States in the Hague:—That they might only traffic to *New Netherland*, as the place was called by the Dutch Government. In that same year a colony was sent and a fort was erected on the western bank of the river, near Albany, and its government was entrusted to *Henry Christaens*. This feeble settlement was scarcely established when *Sir Samuel Argal*, Governor of Virginia, came to dispute them possession of the land. And although they pleaded that they had bought all Hudson's rights and interests in the country, as well as all his maps, they obliged the Dutch Governor to surrender his command, and pay a tribute to the government of Virginia. The States of Holland, fearing to offend a new and powerful ally, submitted to those terms for a while; but soon after, a new governor, *Jacob Elkin*, was



sent, and from that time, they not only failed to pay the promised tribute, but constructed a second fort on Long Island, and subsequently two others, one on the Connecticut River, the other at Nassau. They also built the town of *New Amsterdam*, and for a series of years, being unmolested, they increased in number, and by the exertion of their peculiar national virtues of patience and industry, they subdued all the difficulties inherent to the making of a new colony.

In 1620, the States of Holland established the West India Company, and committed to it the administration of New Netherland. This determination was carried out the following year, and under the management of the Company the new settlement was soon both consolidated and extended. Their capital was *New Amsterdam*, built on *Manhattan Island*.

The extent of territory claimed by the Dutch, as has been represented by some of their own writers, was from *Virginia* to *Connecticut*. Whatever might have been its titular extent, the planters hastened to enlarge their occupations far beyond their immediate use, and by their intrusions into the Delaware and Connecticut countries, laid the foundation of their future disputes with the colonists of these parts.

Complaints having been made to KING CHARLES, by his Ambassador, he represented to the States to disown the whole business, and to declare that it was only a private undertaking. Whereupon a Commission was granted to *Sir George Calvert* to take possession and plant the southern parts, lying towards Virginia, by the name of *Maryland*, and to SIR EDMUND LOYDEN to plant and do the same with the northern parts by the name of *Nova Albion*, which makes the Dutch, for the second time, willing to compound, and for the sum of two thousand and five hundred pounds sterling they offered to go away and leave all their chattels.

But in consequence of the troubles which began and continued for a time in England, they not only rescinded their first proposition but made higher demands.

In May, 1664, after the Restoration, the King considering that the territory called *New Netherland* belonged rightfully to England, designed four Commissioners, COLONEL RICHARD NICHOLS, SIR ROBERT CARR, GEORGE CARTWRIGHT, and SAMUEL MAWRICK, to settle that affair. They had three ships of war to effect their purpose. First they landed at Boston, and from that place went to New Netherland.

They soon reduced the town and fort of New Amsterdam upon conditions advantageous to his Majesty and easy for the Dutch.

I subjoin here a very old description of that country and of *New Amsterdam*.

"It is placed upon the neck of the Island *Manhattan*, looking towards the sea, encompassed with Hudson's River, which is six miles broad; the town is compact and oval, with very fair streets, and several good houses; the rest are built much after the manner of Holland, to the number of about four hundred houses, which in those parts is held considerable.

Upon one side of the town is *James' Fort*, capable of lodging three hundred soldiers and officers; it has four bastions, forty pieces of mounted cannon; the walls of stone have a thick rampart of earth; well accommodated with a spring of fresh water. Distant from the sea seven leagues, it affords a safe entrance even to unskilful pilots; under the town side, ships of any burthen may ride secure against any storms, the current of the river being broken by the interposition of a small island, which lies a mile distant from the town.

About ten miles from the town is a place called *Hell's Gate*, which being a narrow passage, there runneth a violent stream both upon flood and ebb, and in the middle lie some rocky Islands, which the current sets so violently upon, that it threatens present shipwreck, and upon the flood is a large whirlwind which continually sends forth a hideous roaring, enough to fright any stranger from passing further, and to wait for some *Charon* to conduct him through, yet, to those that are well acquainted with the place, there is little or no danger. It is a place of great defence against any enemy coming that way, which a small fortification would absolutely prevent and oblige them coming in, at the west of *Long Island*, by *Sandy Hook*, where *Nutten Island* forces them within the command of the Fort, at New Amsterdam, which is one of the best pieces of defence in the north parts of America. The inhabitants have a considerable trade with the Indians for beaver, otter, and racoon skins, with other furs, as also for bear, deer, and elk skins, and are supplied with venison and fowl in the winter, and fish in the summer, by the Indians from whom they buy these commodities at an easy rate.

The *Manhattan*, Great River, being the principal, having two mouths, wash the mighty island *Watonwaks*, and falls into the Ocean. The southern mouth is called *Port May*, or *Godnys Bay*. In the middle thereof lies an Island called the *Staten*

*Island*, and a little higher the *Manhattan*, so called by the natives which dwell on the east side of the river. They are a cruel people and enemies to the Hollanders, as also the Sanhikans, which reside on the western shore. Farther up are the *Makwaes*, and *Mahicans*, which continually war one against another. In like manner all the inhabitants on the west side of the river *Manhattan* are usually at enmity with those that possess the eastern shore.

This country has many remarkable waterfalls descending from steep rocks, large creeks and harbours, fresh lakes and rivulets, pleasant fountains and springs, some of which boil in the winter, and are cold and delightful to drink in summer. The sea coast is hilly, and of a sandy and clayey soil, which produces abundance of herbs and trees.

The oak grows there from sixty to seventy feet, for the most part free from knots, which makes it the better fit for shipping. The nut trees afford good fuel. Some plants brought hither, grow better than in Holland itself, as apples, pears, cherries, peaches, apricots, strawberries and the like. The vines grow wild in most places, and bear abundance of blue, white, and muscadine grapes. Sometimes since, the inhabitants have made wine of them, which is not inferior to either Rhenish or French.

All manner of plants known in Europe grow in their gardens. *Water Melons*, *Calabasses* and *Pumpkins* are very abundant. The wheat, though six feet high, grows very speedily. *Peas* are gathered twice a year, *barley* springs above a man's height. *Medicinal herbs*, and *Indigo* grow wild in great abundance. In some places also, is store of mountain Crystal, and that sort of mineral which is called *Muscovia Glass*. Others afford marble, serpentine stone, gold and silver.

When Captain *William Clieff*, in 1645, employed the Indian Interpreter, *Agheroense*, to decide the differences which arose between the West India Company and the wild people called *Makwaes*, he observed him to paint his face with a yellow glittering colour, which he judged to be of some rich mineral, whereupon, buying some, of the said *Agheroeuse*, he put it into a crucible, and gained two small pieces of gold out of the same, valued at six shillings, but keeping it private and purchasing a great quantity of the said mineral, he extracted from it a good store of gold, which he sent to Holland in the *Arent Corsen*, of New Haven, but the ship was lost, and was never heard of afterwards, and the *Princess Pink*, in which *Captain Clieff* was



with a large store of the new found mineral, being cast away also, it has always remained a mystery to the present time if it was really gold, and the exact place from where it came.

The inhabitants, though divided into several nations, agree in many things, as also in painting their bodies. Their shields, clubs, and other utensils are alike. They obtain the colours wherewith they paint themselves from a small plant, not unlike the myrtle, or of certain stones, ground into very fine powder.

The forests are inhabited by a large variety of animals, as hogs, black bears, harts and stags, deers, lions, musk-cats, beavers, otters, etc., etc. Towards the south of New Amsterdam are many buffaloes.

Fowls, turkeys, geese, ducks, pigeons, hawks, kites, cranes, storks, ravens, owls, swallows, goldfinches, quails, pheasants, and the like, are very abundant. Moreover, New Amsterdam breeds a strange bird, about a thumb long, full of glittering feathers; it lives by sucking of flowers, like the bee. (This is the humming bird *Trochilus colubris*).

The rivers and lakes produce sturgeon, salmon, carp, perch, barbils, all sorts of eels, and many other. The sea affords crabs, with and without shells; sea-cocks, sea-horses, cod, whiting, ling, herring, mackerel, flounders, turbot, tortels, and oysters, of which some are one foot long, and have pearl, but these are a little brownish.

Amongst the poisonous creatures which infest *New Amsterdam*, the chief and most dangerous is the *Rattlesnake*.

The inhabitants have their hair black as jet, coarse like horse-hair; they are broad shouldered, small waisted, have brown eyes, their teeth exceedingly white. With water they chiefly quench their thirst; their general food is flesh, fish, and Indian wheat, which stamped, is boiled to a pap, by them called *sappaeu*. They eat at any time when they have appetite. Beavers tails are amongst them accounted a great dainty. When they go to hunt, they live several days on parched corn, which they carry in little bags tied about their middle, a little of that corn thrown into water swells exceedingly."

*Henry Hudson* relates:—"That sailing in the river mountains he saw the Indians make strange gestures in their dancing and singing; he observed that they carried darts pointed with sharp stones soddered into the wood, that they slept under the sky on mats or leaves, took much tobacco and this very strong, and that though courteous and friendly they did not inspire him with confidence. Farther up he met with an old

Indian commander of forty men and seventeen women, dwelling in one house, artificially built of the bark of oak trees, round about it, lay above three ship-loads of corn and Indian beans to dry, besides the plants which grew in the fields. No sooner had Hudson entered the house than he was received on two mats spread on the ground, and two men immediately were sent to shoot venison or fowls, and instantly returning brought two pigeons and a fat hog, which they nimbly fleeced with shells, and was also laid down to the fire. They also made other preparations for Hudson's entertainment, but not willing to venture himself amongst them that night, tasted not of it, notwithstanding the Indians breaking their darts, threw them into the fire, that thereby they might drive away all fears and jealousies from him.

The women are more neat than the men, and though the winter pinches them with excessive cold, yet they go naked till their thirteenth year. Both men and women wear a girdle of whale-fins and sea-shells; the men put a piece of cloth, half an ell long and three quarters broad, between their legs, so that a square piece hangs behind below, and another before the belly. The women wear a coat, which comes half way down their legs, so curiously wrought with sea-shells that one coat sometimes cost many pounds. Moreover, their bodies are covered with deer-skins, the lappets or ends of which hang full of points, a large skin buttoned on the right shoulder, and tied about the middle serves for an upper garment, and in the night for a blanket. Both men and women go for the most parts bare headed; the women tie their hair behind in a tuft, over which they wear a square cap wrought with sea-shells, with which they adorn their foreheads, and also wear the same about their necks and hands, and some about their middle. Before the arrival of the Hollanders, they wore shoes and stockings of buffalo-skins, some likewise made shoes of wheaten-straw. The men grease their bodies and paint their faces with several colours, black, white, red, yellow, or blue; the women put here and there a black spot; both of them are very reserved. Their houses are most of them built of one fashion, only differing in length. They build after this manner: They set peeled boughs of nut-trees on the ground, according to the size of the place which they intend to build, then joining the tops of the boughs together, they cover the walls and the top with bark of cypress, ashen and chestnuts trees, which are laid one upon another, the smallest side being turned inwards according to the size

of the houses ; several families, to the number of fifteen, dwell together, everyone having his apartment.

Their fortifications are built on steep hills near rivers; the access to them is only at one place. Within, they generally build twenty or thirty houses, of which some are one hundred and eighty feet long, all of them full of people. In the summer, they pitch their tents along by the riverside to fish. In winter, they remove into the woods, to be near their game of hunting, and also of fuel.

They generally have only one wife, but for the least offence the man can turn her out, and marry another. On breach of marriage, the children follow the mother. The women are very fond of their offsprings, and take great care of them. They make great lamentation at their death, especially for sons. They cut off the hair of their heads, which at the funeral is burnt in the presence of all their relations. They also perform the same when their husbands die; and besides, they blacken their faces, and putting on a hart-skin shirt, mourn a whole year. They bury the dead with a stone under the head; near it, they set various utensils, as pot, kettle, dish, spoons, money, and provisions, to use in the other world. When it is a chief, they build a conical hill on the grave.

The language of this country is varied. The principal tongues are the *Mannhatan*, *Wappanoo*, *Siavanoo*, and *Minqua*, which are all very difficult for strangers to learn. Their money is made of the innermost shells of a certain shell-fish, cast up twice a year by the sea. These shells they grind smooth, and make a hole in the middle, cutting them of an exact size, and so put them on strings, which then serve as money.

They have scarcely any religion ; they suppose the moon to have great influence on plants. The sun is called to witness whenever they swear. They stand in much fear of the Devil, and make offerings to propitiate in their favour, to the Evil One. They burn the first of what they hunt or fish, in his honour. They acknowledge the residence of a God above the stars; but they say they know him not, because they never saw him.

Concerning the souls of the deceased, they believe that those which have been good in their lifetime, live southwards, in a temperate country, where they enjoy all manner of pleasure and delight; as to the wicked, they wander up and down in miserable condition. The cries of wild beasts in



the night are supposed to be the spirits of souls transmigrated into wicked bodies.

At their dancing matches, where all persons that come are freely entertained, their custom is, when they dance, for the spectators to have short sticks in their hands and to knock the ground, and sing altogether, whilst they that dance sometimes act war-like postures, and then they come in painted for war, with their faces painted black and red, or all black, or all red, with some streaks of white under their eyes, and so jump and leap up and down without any apparent order, uttering many expressions of their intended valour.

When their King or Chief sits in Council, he has a company of armed men as body guards, great respect is shown him by the people, which is principally manifested by their silence. After he has declared the cause of their convention, he demands their opinion, ordering who shall begin. The person ordered to speak after having declared his mind, tells them all that he has done, no man ever interrupting any person in his speech, nor offering to speak, though he make ever so many long stops, till he says that he has done. The Council having all declared their opinions, the King after some pause, gives the definitive sentence, which is commonly seconded with a shout from the people, everyone seeming to applaud and manifest their assent to what is decided.

When *New Amsterdam* surrendered to the English Commissioners, it contained about 3,000 inhabitants, of whom nearly one half preferred to return to Holland. The remainder continued in the Colony, and among them, the noble Governor, Stuyvesant, who survived a few years the fortune of his little empire, and left descendants, who held high rank in the city for many years after, and were also frequently elected to the Magistracy of New York.

The name of *New Netherlands* was changed into that of *Yorkshire*, and *New Amsterdam* into that of *New York*, *Fort Orange* into *Fort Albany*, etc., etc.

All the country having been conferred by patent upon His Royal Highness, the DUKE OF YORK AND ALBANY, His Royal Highness appointed Colonel Nichols, Governor of New York. He was the first Governor of that country, and his administration was wise and beneficial.

In 1666, Holland being at war with England, it was feared that the Dutch would try to recover New York, and *Colonel Nichols* was advised to put the city in a state of defence, which he did thoroughly, but the Dutch never attempted to recover

their former possession, and, in July 1667, it was formally ceded to England in exchange for their colony of SURINAM.

*Colonel Nichols* resigned soon after, and was succeeded by *Colonel Lovelace*, who successfully administered the country during six years.

The second war with Holland in 1672, together with the news of the Duke of York's profession of the Catholic faith, produced a discontent in the colony, which led a large number to abandon the city and settle in *Carolina*.

A small fleet sent out from Holland approached New York at a time when the Governor was absent, the city was under the command of *Colonel Manning*, who surrendered the place to the Dutch without firing a single gun. The Dutch inhabitants were elated with triumph, and the English had no cause of resentment, but in the conduct of their pusillanimous commander. The Dutch were not long in regaining their former supremacy, but the triumph of the one, and the mortification of the other did not endure long. Early in the spring of 1674 the controversy was terminated by the treaty of Westminster, by which New York was restored to the English. From that time to the 19th of April, 1775, the day of the battle of Lexington, the English retained possession of the country, which developed immensely under their rule.

From the 19th of April, 1775, to 19th of April, 1783, exactly eight years since the shedding of the first blood in the revolution at Lexington, the war of Independence continued with more or less fury during that time, and ended by the treaty of peace, signed at Paris on the 3rd of September, 1783, by *David Hartley* on the part of GEORGE III., and by *John Adams*, *Benjamin Franklin*, and *John Jay*, on the part of the UNITED STATES.

By the first article of this treaty his Britannic Majesty acknowledges the United States to be free, sovereign, and independent states, that he treats with them as such, and relinquishes for himself and heirs all claims to the government, propriety and territorial rights of the same. The second article defines the boundaries of the states, and the third secures them the right of fishing on the Grand Bank, and other banks of Newfoundland, and other places in the possession of the British, formerly used by the Americans for fishing-grounds. The fourth article secures the payment to creditors the debts heretofore contracted; whilst the fifth recommends to Congress the restitution of estates formerly belonging to British subjects which had been confiscated.

The sixth article prohibits any future confiscations. The seventh provides for firm and perpetual peace; the eighth secures the navigation of *Mississippi* to both Englishmen and Americans; the ninth orders all conquests made after the treaty of peace to be restored; the tenth provides for the ratification of the treaty within six months, which was duly done.

The different courts of Europe had already acknowledged the Independence of the United States.

A federal Constitution was formed, but not without opposition, and even insurrection. It took six years before it was ratified by the different States of the Union. Conventions were assembled in the several States to consider its provisions, and it took nearly a year before the requisite number had decided in its favour, and thus enabled Congress to take measures for organizing the new Government. At last it was done, and the illustrious and successful commander-in-chief of the American armies, GEORGE WASHINGTON, who had resigned and retired to his private seat, at Mount Vernon, was elected PRESIDENT OF THE UNITED STATES.



## CHAPTER XVI.

Presidents of the United States since the declaration of its Independence:—Washington, John Adams, Thomas Jefferson, James Madison, James Monroe, John Quincy Adams, Andrew Jackson, Martin Van Buren, William Henry Harrison, John Tyler, James H. Polk, Zachary Taylor, Millard Fillmore, Franklin Pierce, James Buchanan, Abraham Lincoln, Andrew Johnson, Ulysses S. Grant, Rutherford Hayes, James Garfield, Chester Arthur, Grover Cleveland, Benjamin Harrison.

## WASHINGTON.

**H**IS election, as President of the United States, was formally announced to him on the 14th of April, 1789. He accepted the office with unfeigned reluctance, occasioned by his love of retirement, and by tenderness for his reputation. As his presence at *New York*, then the seat of the Government, was immediately required, he set out from Mount Vernon on the 16th, the second day after he received notice of his appointment. His journey was a triumphal procession, such as no conqueror can boast. Since leaving his house, he was accompanied by a company of gentlemen from Alexandria, who entertained him in that town. The people gathered to see him as he passed. When he approached the towns the most respectable citizens came out to meet and welcome him, he was escorted from place to place by companies of militia, and in the principal cities, his presence was announced by the firing of cannon, ringing of bells, and military display. A committee of Congress, consisting of three members of the Senate, and five of the House of Representatives, was appointed to meet him in New Jersey, and attend him to the City of New York.

To Elizabeth-town Point, came many other persons of distinction, and the heads of several departments of the Government. He was there received in a barge, splendidly fitted up for the occasion, and rowed by thirteen pilots in white uniforms. This was followed by vessels and boats, fancifully decorated, and crowded with spectators. When the President's barge approached the city, a salute of thirteen guns was fired from the vessels in the harbour, and from the battery. At the landing, he was again saluted by a discharge

of artillery, and was joined by the Governor and other officers of the State and the Corporation of the city. A procession was then formed headed by a long military train, which was followed by the principal officers of the State and City, the clergy, foreign ministers, and a great concourse of citizens. The procession advanced to the house prepared for the reception of the President. The day was passed in festivity and in joy, and the city was brilliantly illuminated during the evening.

On the 30th of April, *Washington* solemnly swore that he would faithfully execute the office of President of the United States, and that he would, to the best of his ability, preserve, protect, and defend the Constitution of the United States, and the oath of office was administered to him on the balcony, in front of the Federal Hall, by Mr. Livingston, the Chancellor of the State of New York, in the presence of both branches of the National Legislature, and thousands of spectators. During the ceremony a profound silence prevailed throughout the whole of the assembled multitude, but no sooner had the Chancellor proclaimed him President of the United States, than he was answered by the discharge of thirteen guns from the battery, and the deafening cheers of thousands of grateful and affectionate hearts. *Washington* then retired to the Senate Chamber, and in an impressive speech addressed to his "Fellow-citizens of the Senate and House of Representatives," declared his reluctance to accept the high office which the people had thought fit to bestow upon him, his incapacity for the mighty and untried cares before him, and offered his fervent supplications to that Almighty Being, who rules over the universe,—who presides in the councils of nations,—and whose Providential aids can supply every human defect, that his benediction might consecrate to the liberties and happiness of the people of the United States, a Government instituted by themselves for these essential purposes, and might enable every instrument employed in its administration to execute with success the functions allotted to his charge.

At the conclusion of his remarkable address, *Washington* went to St. Paul's Church, where the service was read by the Bishop, and the ceremonies of the day closed. Tokens of joy were exhibited throughout the city, as on the day of his arrival, and in the night the whole place was illuminated, and fireworks displayed in almost every quarter.

At the first session of Congress, a law was passed

imposing duties on imported merchandise, and taxes on tonnage of vessels. Congress then proceeded to complete the Government by instituting an executive cabinet to be composed of heads of the different departments, of the treasury, of war, and of state. *Alexander Hamilton* was appointed Secretary of the Treasury, *General Knox* Secretary of War, and *Thomas Jefferson* Secretary of State. *John Jay* received the office of Chief Justice; the associate judges were *John Rutledge*, *James Wilson*, *John Cushing*, *Robert Harrison*, and *John Blair*. These were the first officers of Washington, and they raised for themselves a monument of fame, inferior only to that of their chief, and they are still gratefully remembered by an admiring country.

The second session of the first Congress commenced on the 1st of January, 1790. The President recommended several subjects as claiming their consideration, among which were: a provision for the common defence, the arming and disciplining of the militia, laws for the naturalization of foreigners, an uniformity in the currency, weights and measures, the advancement of agriculture, commerce and manufactures, the encouragement of new and useful inventions, the establishment of post offices and post roads, the promotion and patronage of science and literature, and the adoption of effective measures for the support of the public credit.

During this session, it was also decided that the seat of Government should be removed for ten years to *Philadelphia*, and then be established permanently at some place, on the *Potomac River*. The next year, during his southern tour, Washington selected the position for the future Capital, the duty devolving on him as President. Under his direction the territory was surveyed, the city planned and laid out, and the sites of the public buildings designated. The territory has since been called *District of Columbia*, and to the city was given the name of its illustrious founder.

In the year 1791, the first census of the United States was taken, when it appeared that the whole number of inhabitants was *three millions, nine hundred and twenty-one thousand, three hundred and twenty-six*, of whom 695,655 were slaves.

At the meeting of the second Congress at *Philadelphia*, the President congratulated them on the prosperous condition of the country, on the great success of the bank scheme, and on many other reforms made. The principal laws passed at this



session were those for establishing a uniform militia system, increasing the army, and apportioning the Representatives.

During the year 1792, *Washington* expressed a wish to retire from the cares of government, and proposed to decline a re-election. He had even prepared a farewell address to the people, but he was, however, persuaded by *Jefferson*, *Hamilton*, *Randolph*, and others, to relinquish his design, and was a second time elected President of the United States by the unanimous vote of the electors. *John Adams* was nominated Vice-President. From 1792 to 1796, several wars and rebellions took place, but by treaty or otherwise, peace was restored, and in September, 1796, *Washington* announced to the people of the United States his irrevocable decision of retiring from public life, and spending the remainder of his days in his peaceful and quiet retreat of *Mount Vernon*, where he died on the 14th December, 1799, aged sixty-eight years. *Mount Vernon* is situated at about fifteen miles from the capital, and is a place of pilgrimage to Americans and others. No one pass there without saluting the mausoleum containing the mortal remains of him who was called by the people "THE FATHER OF THE COUNTRY," by which name he is and will ever be known all over America.

### JOHN ADAMS, 1797—1801.

JOHN ADAMS, the candidate of the Republicans, was elected President of the United States at the election of November, 1796, with Mr. JEFFERSON as Vice-President.

They were installed, in the presence of *Washington*, on the 4th day of March, 1797, and forthwith entered on the duties of their respective offices.

Ability of a very high order, an unsullied character, and important services rendered during the progress of the Revolution, entitled Mr. Adams to the dignified office to which he was elected. He published in 1765 his Essay on the Canon and Feudal Law, in which he expresses the boldest and elevated sentiment, in language most vigorous and animating, and says that America must be unoppressed or must become independent.

In June, 1774, he was elected Member of the Continental Congress, of which body, from the first, he was a distinguished leader.

In June, 1775, when he could have secured for himself the appointment of Chief Commander of the American armies,

he recommended George Washington to that all important post. Mr. Adams was one of the most earnest and influential advocates of the declaration of Independence.

During his time of office, war was declared between the United States and France, and various naval battles were fought, but an honourable peace was soon concluded between *Napoleon Bonaparte* and the envoys of the President, *M. M. Oliver Ellsworth, Patrick Henry, and William Van-Murray*.

In 1800, Congress met for the first time in Washington. In his address, the President, after congratulating the people upon having a permanent seat of government, continued: "It would be unbecoming the representatives of this nation to assemble for the first time, in this solemn temple, without looking up to the Supreme Ruler of the Universe, and imploring his blessing:—May this territory be the residence of virtue and happiness! In this city may that piety and virtue, that wisdom and magnanimity, that constancy and self-government which adorned the great character whose name it bears, be for ever held in admiration! Here and throughout our country, may simple manners, pure morals, and true religion flourish for ever."

The first term of Mr. Adams, as President, being about to expire, a new election was held.

It was not until the thirty-fifth ballot, that the friends of Mr. Jefferson succeeded in electing him.

### THOMAS JEFFERSON, 1801—1809.

THOMAS JEFFERSON, elected President of the United States, took office on the 4th of March, 1801. His inaugural address is one of the most celebrated state papers which has ever proceeded from the pen of its writer. Here are some passages from it:—Equal and exact justice to all men of whatsoever state or persuasion, religious or poetical, peace, commerce, and honest friendship with all nations, entangling alliances with none, the support of the state governments in all their rights, as the most competent administrations of our domestic concerns, and the surest bulwarks against anti-republican tendencies, the preservation of the general government in its whole constitutional vigour, as the sheet-anchor of our peace at home and safety abroad, a jealous care of the right of election by the people, a mild and safe corrective of abuses which are lopped by the sword of revolution where peaceable remedies are unprovided, absolute acquiescence in the decision of the majority, the vital principle

of republics, from which there is no appeal, but to force, the vital principle and immediate parent of despotism, a well disciplined militia, 'our best reliance in peace and for the moments of war till regulars may relieve the supremacy of the civil over the military authority, economy in the public expense, that labour may be lightly burdened, the honest payment of our debts, and sacred preservation of the public faith, encouragement of agriculture, and of commerce as its handmaid, the diffusion of information, and arraignment of all abuses at the bar of the public reason, freedom of religion, freedom of the press, and freedom of the person under the protection of the *habeas corpus*, and trial by juries impartially selected. These are the essential principles of our government, and those which ought to shape its administration. These form the bright constellation, which has gone before us and guided our steps through an age of revolution and reformation. The wisdom of our sages and blood of our heroes have been devoted to their attainment, they should be the creed of our political faith, the text of civic instruction, the touchstone to try the services of those we trust, and should we wander from them in moments of error or alarm; let us hasten to retrace our steps, and to regain the road which alone leads to peace, liberty, and safety.

During the year 1801, a second census of the United States was completed, showing a population of *five millions, three hundred and nineteen thousand, seven hundred and sixty-two*, an increase of 1,400,000 in ten years. The enormous increase of exports, from 19 to 99 millions of dollars, and the corresponding augmentation of the revenue, from 90,000 to nearly 13 millions, can only be attributed to the liberal institutions of the country.

During his term of office, *Ohio* was admitted into the Union, and *Louisiana* was bought from the French at a cost of twenty millions of francs, or £800,000.

The Tripolitan war was also fought during the presidency of Mr. Jefferson.

On the 4th of March, 1805, Mr. Jefferson entered upon his second term of office. AARON BURR was succeeded in the Vice-Presidency, by GEORGE CLINTON of New York. In 1808, the President announced his determination to retire from office at the close of the term, and JAMES MADISON was nominated by the republican party to succeed him. Jefferson retired to his seat at *Monticello*, and passed the remainder of his life in literary pursuits.



It was during Jefferson's presidency that a measure proposed by him to Congress, on the 18th of January, 1803, was sanctioned: That of exploring the river Missouri from its mouth to its source, and crossing the highlands by the shortest passage, to seek the best water communication, thence to the Pacific Ocean. This exploration was successfully made by Captain Meriwether Lewis, assisted by Lieutenant Clarke.

They entered the Missouri on the 14th of May, 1804, and on the 1st of November took up their winter quarters near the Mandan towns, 1600 miles above the mouth of the river, in latitude  $47^{\circ} 21' 47''$  north, and longitude  $99^{\circ} 24' 56''$  west from Greenwich. On the 8th of April, 1805, they proceeded up the river in pursuance of the object prescribed to them. During his stay among the *Mandans*, Captain Lewis was able to lay down the Missouri according to courses and distances taken on his passage up, corrected by frequent observations of longitude and latitude, and to add to the actual survey of this portion of the river, a general map of the country, between the Mississippi and the Pacific Ocean, from the 33 to the 54 degrees of latitude. He also observed the customs, language, commerce, and other interesting facts respecting the Indian tribes inhabiting the territory of Louisiana, and the adjacent countries to its northern and western borders.

This was the first voyage of discovery made in the West, by order of the Government of the United States.

### JAMES MADISON, 1809—1817.

JAMES MADISON, the fourth President of the United States, took office in March, 1809. GEORGE CLINTON being elected Vice-President.

One of the first acts of the Congress was to repeal the embargo law; but at the same time prohibiting all intercourse with France and England, in war at the time. In consequence of repeated hostilities committed by the English, war was declared against that country on the 18th of June, 1812. It was fought with great bravery on both sides, on land and at sea, and lasted during the whole of the first and part of the second term of office of President Madison.

After the repulse of the British troops from Baltimore and Plattsburg, and the capture of the English squadron on Lake Champlain, a treaty of peace was signed at Ghent, on the 24th of December, 1814, and was ratified by the Prince Regent of

England, on the 28th of the same month, and by the President of the United States, with the advice and consent of the Senate, on the 17th February, 1815.

A treaty, regulating the commerce between the United States and Great Britain, was signed in London on the 3rd of July, 1815, and ratified by the President on the 22nd of December, in the same year.

There was also a war between the Bey of Algiers and the Republic of the United States, which ended in 1815, in favour of that Republic.

The territory of *Indiana* was made into a State and admitted into the Union in 1816. In that year, the Republic prospered immensely,—canals were opened in various states, a national bank was instituted, and many thousands of emigrants—chiefly from Great Britain—arrived in the country.

In 1816, Mr. Madison's second term of office being about to expire, JAMES MONROE was elected to succeed him.

## JAMES MONROE, 1817—1824.

JAMES MONROE, the fifth President of the United States, entered upon the duties of his office on the 4th of March, 1817.

During the year 1817 the territory of the Mississippi was enacted into a State, and admitted into the Union. In 1819, another accession was received in the State of *Alabama*, and Congress created *Arkansas* into a territorial government. In 1820, *Maine* was separated from *Massachussets*, made into a State, and admitted into the Union. In 1819, a treaty was made with Spain, by which *Florida* was ceded to the United States. This treaty was not finally ratified by the King of Spain till the year 1821. On the 1st of July of that year, General Jackson, who was governor of the West Florida, issued a proclamation, declaring the Spanish Government in that province ended, and that of the United States of America established.

On the 7th of July, the keys of the town of *Pensacola*, the archives, documents, and other articles mentioned in the inventories, were transferred to General Jackson, by the Spanish Commander. In this year *James Monroe* was nominated President for a second term of four years.

In 1824, two important treaties were concluded; one between the United States and Russia, determining the north-west boundary of the two countries, at the line of fifty-four

degrees and forty minutes of latitude north. The second, with England, for the suppression of the African slave trade. It was signed in London by plenipotentiaries specially appointed for the purpose.

The year 1825 was also signalized by the visit of the celebrated French General, Lafayette, to America. He arrived in New York harbour on the 13th of August, and proceeded to Staten Island, the residence of DANIEL D. TOMKINS, Vice-President of the United States. A committee of the New York City Corporation, and many distinguished citizens proceeded thither, to welcome him to their capital. Steamboats with thousands of passengers, and decorated with flags of all nations, escorted him to the city, where the whole population was waiting to welcome him: he who had perilled his life in the cause of their liberties. He was received by the civil officers of their city, and an address was delivered by the Mayor.

During the few days that he remained in New York deputations poured in, from all the principal cities of the Middle and Northern States, inviting him to visit them.

From New York, he proceeded to Boston, Portsmouth, New Hampshire, Savannah, New Orleans, Saint Louis, and back to Boston. This journey of five thousand miles was performed in the course of the year, and the same extraordinary marks of respect and attention were paid him throughout, as in the great cities. The whole nation joined in wishing health, happiness, honour, and long life to America's favourite adopted son.

He reached Washington during the session of Congress, and that body voted him the sum of two hundred thousand dollars (£40,000) and a township of land, six miles square, to be located in any of the unappropriated lands, where the President should direct. A suitable acknowledgment for such an immense and unexpected gift, added to former and considerate bounties was made by the General, describing himself as an old American soldier, and an adopted son of the United States, two titles dearer to his heart than all the treasures of the world.

On a second visit to Boston, he listened to an address from the lips of the eloquent *Daniel Webster*. Wherever he went, the people rose in a mass to welcome him to their homes, and when he wished to return to France, a new American frigate, the *Brandywine*, was fitted out for his accommodation. In this vessel, he set sail on the 7th of



September, 1825, for his native country. The authorities of Washington, Georgetown, and Alexandria, the principal officers of the Government, civil, military, and naval, members of Congress, and other citizens assembled on that day at the President's house to take leave of the General. President Adams addressed him with dignity, but with evident emotion, and bade him adieu.

At the usual term of office an active canvass was commenced for the election of the successor of Mr. Monroe. Four candidates were proposed: Messrs. Jackson, Adams, Clay, and Crawford. Mr. Adams was elected, and Mr. Monroe retired.

The principal event of Mr. Monroe's term of office was the celebrated doctrine preached by him, and known as *Monroe's doctrine*, in which he says: AMERICA TO THE AMERICANS, AND TO NO ONE ELSE, and advising the inhabitants to unite and to repel all foreign invasion in America.

## JOHN QUINCY ADAMS, 1825—1829.

JOHN QUINCY ADAMS, the sixth President of the United States, entered upon the duties of his office in March, 1825. In his inaugural address he insisted on the discarding of every remnant of rancour against each other, to be all friends, and to work harmoniously for the welfare and prosperity of the country.

During his administration, an important treaty was concluded with the Indian tribe of the *Creeks*. By this treaty the Creeks ceded all the lands lying within the boundaries of the State of Georgia, inhabited by them, in exchange for others situated westward of the Mississippi, on the Arkansas River. A treaty was also concluded with the Indian tribe of Kandas, ceding all their lands, within and without the limits of Missouri, excepting a reservation on the Kansas River, thirty miles square, including their villages. For these lands, the *United States* agreed to pay them, 3,500 dollars yearly, during twenty years, to provide for their education and civilisation, and to furnish them with a specified quantity of agricultural stock.

Another treaty was also concluded with the Great and Little *Osages*, for their lands situated in Arkansas and elsewhere, for an annuity of 7,000 dollars for twenty years, and other provisions.

General conventions of peace, amity, navigation, and commerce were made during the years 1825-1826 with the Republics of *Columbia* and *Central America*, and with the King of Denmark.

The Tariff Bill, which was enacted by Congress in the Session of 1828, produced the most violent commotion in the Southern States, and was passed only by a very small majority.

On the anniversary of American Independence, 1826, two of the ex-presidents of the United States departed this life. JOHN ADAMS died at Quincy in the ninety-first year of his age; THOMAS JEFFERSON, at Monticello, Virginia, in his eighty-third year.

In November, 1858, Andrew Jackson, of Tennessee, was elected to succeed Mr. Adams.

### ANDREW JACKSON, 1829—1837.

ANDREW JACKSON, the seventh President of the United States, was installed in his office in March, 1829. JOHN C. CALHOUN taking the seat of Vice-President.

The principal topic of discussion upon the assembling of Congress was the Tariff Act, which had been, from the moment of its passing, a subject of violent contention and popular irritation between the Northern and Southern States; but General Jackson in his message carried the doctrines of protecting home productions, till they could compete with foreign importation, to their utmost length. An Act was passed, opening the American ports for the admission of British vessels from the colonies with the same cargoes which might be brought, and at the same duties that were payable by American vessels, suspending the alien duties on British vessels and cargoes. In consequence of this Act, the United States were allowed the benefit of the Act of Parliament of 1825, which, upon certain terms, allowed foreign nations a participation in her colonial trade.

In 1832, an act was passed which lowered the duties upon some articles, but it was far from meeting the wishes of *Georgia* and *Carolina*. A convention assembled at Columbia from all parts of the State of South Carolina, and declared the tariff acts of 1828 and 1832 null and void, and not binding, and that if the United States should attempt to force them, threatened to form a separate government for South Carolina.

Whilst civil war and a dissolution of the Union seemed thus to be approaching, General Jackson, his four years

having expired, was re-elected President. In his message after his re-election, he announced that he would not hesitate to bring the Southerners back to their duty, by force if necessary. He also attacked the solvency of the United States Bank, intimating that it was no longer a safe depository for the public funds.

Towards the close of December, 1832, a bill was introduced into Congress, by which it was proposed to reduce the duties. This did not meet the views of either party. At last these difficulties were overcome by the introduction of a bill by Henry Clay, of Kentucky, known hereafter as the Compromise Bill. By it, all duties were to be gradually reduced till 1842, when they were to reach the minimum of twenty per cent. *ad valorem*. This bill was carried through both houses of Congress, and received the sanction of the President.

At the expiration of the Charter of the United States Bank, a large number of State banks were created, which produced and nourished all manner of wild speculations, particularly in appropriated public lands.

During the winter session of 1835, a bill was brought before Congress recognising the Independence of Texas, but it was postponed. The Indian war was continued in Florida during the year 1836, and many plantations and settlements in the neighbourhood of St. Augustine were ravaged, inhabitants slain, and negroes taken away by the enemy. There was also a war with the Indians of the north-western frontier called *Black Hawk's war*, which resulted in the capturing and deposing of that chief.

In the early part of 1837, General *Santa Anna*, the President of the Republic of Mexico, was made a prisoner by the Texans, and subsequently set at liberty. He visited Washington, whence after a short stay, he returned to Mexico.

Moore's Electric Telegraph was discovered in 1832.

On the 11th of November, 1836, elections for the nomination of a new President took place, and MARTIN VAN BUREN, was elected.

## MARTIN VAN BUREN, 1837—1841.

MARTIN VAN BUREN, the eighth President of the United States, took possession of the chair on the 4th of March, 1837. The New President was scarcely seated when a severe commercial crisis burst all over the country. It was at New Orleans that the first failure of consequence was



declared. New York, Philadelphia, Boston, Baltimore, Albany, and many others followed suit. The banks ceased their payments in specie. Even the mammoth bank of the United States bent to the fierce tempest and imitated the example of the rest. One sentiment pervaded all classes: the anticipation of universal ruin, and individual beggary. All works were stopped. A Bill was passed suspending the payment of the fourth installation of the surplus revenue to the States until the 1st day of January, 1839. Bills were passed authorising the issue of treasury notes, for the extension of the payment of revenue bonds for a short period, authorising the warehousing in bond of imported goods for a term of three years, organising a sub-treasury system, whereby the nation should become its own banker, but this last Bill was postponed.

When the Congress re-assembled on the 4th of December, the Sub-Treasury Bill was ultimately rejected in 1838. During this year the banks generally resumed specie in payments, the effects of the commercial catastrophe were rapidly subsiding, and the harvest was abundant.

A convention for fixing the boundaries of the United States and Texas was concluded at Washington, on the 25th of April. Great dismay was created in the commercial world towards the close of the year by the suspension of specie payments on the part of all the principal banks.

Negotiations were opened respecting the boundaries of the United States and the British provinces.

The first Transatlantic trip was done in 1832, by an American steamer.

In November, the time of the election of a new President being arrived, WILLIAM HENRY HARRISON was elected to the post, and JOHN TYLER, of Virginia, as Vice-President.

## WILLIAM HENRY HARRISON, 1841.

WILLIAM HENRY HARRISON, the ninth President of the United States, entered on duty in March, 1841; but his inaugural address was the only act of his administration, having died on the 4th of April, within one month of his inauguration. He was the first President who died in office.

General Harrison was in the sixty-ninth year of his age.

The funeral took place on the 7th of April. The order of the ceremony was very imposing; the procession extended over two miles, and was the longest ever witnessed in Washington. A sentiment of the profoundest grief pervaded

every part of the Union on this melancholy occasion. A national fast was proclaimed, and the affection and respect of the people were testified by all sorts of public demonstrations.

### JOHN TYLER, 1841—1845.

According to Constitution, M. TYLER now became President. He arrived at Washington on the 5th of April, 1841, and was immediately sworn into office. Mr. Southard, President of the Senate, became Vice-President. On the 8th, the new President issued an address suited to the occasion, in which, after lamenting the decease of General Harrison, he expressed his intention of carrying into practice what he conceived to have been that gentleman's principles. The Cabinet chosen by General Harrison was retained in office.

On the 31st of May, the twenty-seventh Congress assembled at Washington. A message from the President was read, His views with regard to foreign policy were of a pacific character. He stated that the census showed the population to be seventeen millions, and that it had doubled in twenty-three years. It is during this administration that Colonel Fremont's Expedition to the West and to California was sanctioned.

A Bill for the establishment of a new Bank of the United States was presented, but was defeated twice.

A Bill was passed for the distribution of the proceeds of the public lands.

On the 9th of August, 1842, a new treaty was made with England, concerning the north-eastern boundaries between the two countries, but more especially for the suppression of the slave trade.

During the Session of Congress which closed June, 1844, the principal subjects of attention were the modification of the Tariff, and the annexation of Texas to the United States, but the treaty negotiated to that effect by the Secretary of State and the Texan Commissioners, and signed by the President, was rejected by the Senate.

One of the most remarkable events during this administration is the deliberate repudiation by several of the States of the public engagements which they had contracted by bonds, on the faith of which, private individuals had advanced money to them.

At the expiration of office of M. TYLER, JAMES K. POLK, of Tennessee, was elected President.

## JAMES K. POLK, 1845—1849

JAMES K. POLK, the eleventh President of the United States, entered upon the duties of his office on the 4th day of March, 1845.

President Polk had always been unfavourable to the establishment of a National Bank, or to the abolition of slavery. He was of opinion that each State had the exclusive power to regulate this subject according to its own judgment, and that the general Government had no power to interfere with, or to act upon the subject of domestic slavery, the existence of which, in many of the States, was expressly recognized by the Constitution of the United States.

It was during this administration that war was declared between the United States and Mexico, resulting in the capture of the Capital by the North Americans, and the treaty passed between the two countries on the 2nd February, 1848. By that treaty, which was ratified on the 16th of March, 1848, by the American Congress, and on the 30th of May of the same year by the Mexican Congress, Upper California was ceded to the United States on payment of fifteen millions of dollars, or (£3,000,000).

The name of *Polkos*, from *Polk*, was given to the Mexicans, who pronounced against the legal government of Mexico in 1847.

In November, 1848, ZACHARY TAYLOR was elected President to succeed to Mr. POLK.

## ZACHARY TAYLOR, 1849.

ZACHARY TAYLOR, the twelfth President of the United States, took possession of the chair on the 4th of March, 1849. It was during this administration that the rich gold placers of California attracted the general attention of the world, and attracted such a large number of immigrants of all nationalities with the extraordinary result that, in a few years, a magnificent new State was created, in a place which for centuries had only been known as a wilderness.

Zachary Taylor was born in the county of Orange, Virginia, on the 24th of September, 1784. At the early age of twenty-four, he was nominated lieutenant, and in that capacity, he took part in the war against the English, and also against the Indians. He was made a colonel in 1834. In 1836, he took part in the Florida wars. In 1845, he was sent to Texas, and intrusted with the defence of the frontier



of this new State. He occupied *Corpus Christi* until the 12th of March, 1846, when he took the offensive against the Mexicans, whom he routed.

He died at Washington, on the 1st of July, 1850, after a little over one year of office. He was succeeded by the then Vice-President, Millard Fillmore.

### MILLARD FILLMORE, 1850—1853.

MILLARD FILLMORE, the thirteenth President of the United States, succeeded General Taylor in July, 1850, and remained in office till 1853, Millard Fillmore was born at Summer Hill (New York) on the 7th of January, 1800, of a poor English family. He was educated in the parish school. At the age of nineteen, he was articled as clerk with Barrister Wood, and during the time that he remained with him, he studied assiduously and took his degree. In 1829, he began his political career as the representative of the county of Erie (New York). He was nominated Member of the Congress in 1832, and was re-elected several times in the same capacity. In 1848, he was elected Vice-President. He died at Buffalo, the 10th of March, 1874.

### FRANKLIN PIERCE, 1853—1857.

FRANKLIN PIERCE, the fourteenth President of the United States, entered upon the duties of his office in March, 1853, shortly before my arrival in that country. During his administration was held the first American International Exhibition, that of New York, which was a great success. The handsome Central Park of New York was also begun during his administration.

Franklin Pierce was born at Hillborough, New Hampshire, on the 23rd of March, 1804. At first he worked as a farmer, but this work being uncongenial to him, at the age of twenty he left farming, and went to study law at Northampton School, Massachussets, and in the office of Judge Parker, in Amherst. He took his degree of Barrister-at-Law in 1827, and went to practice in his native town, which elected him two years afterwards as their representative in the Legislative Assembly of the State. He remained in that post from 1829 to 1832. In 1833 he was elected Member of the Congress, and in 1839 Senator. In 1842 he retired to Concordia, New Hampshire, and practised as a barrister. In 1847, at the time of

the declaration of war with Mexico, he took service in the army, was wounded, and appointed colonel. After the successful attack of Vera Cruz, he was appointed General. In November, 1852, he was elected President, with a large majority. He died in September, 1869.

### JAMES BUCHANAN, 1857—1861.

JAMES BUCHANAN, the fifteenth President of the United States, took possession of the Presidency on the 4th of March, 1857. He had occupied the post of Secretary of State during the administration of President Polk. During his term of office, his chief ambition was the enlargement of the United States. He was always very prudent, and was considered a good administrator.

James Buchanan was born at Stony-Battes, in the county of Franklin, Pennsylvania, on the 23rd of April, 1795. His father was Irish, and the possessor of a farm. At the age of 14, Buchanan was sent to the College of Dickinson, Carlisle, where he took his degrees. In 1809, he was articled to Lawyer James Hopkins, of Lancaster, and under his direction he studied law. In 1814, he was elected a Member of the Legislature of Pennsylvania. Six years after, he was elected Member of the Congress of the United States, where he remained up to 1831. After this, he entered the diplomatic career, and was sent to Russia by General Jackson. He came back to the United States in 1853. In 1856 he was elected President. He died at Lancaster, Pennsylvania, on the 1st of June, 1868.

### ABRAHAM LINCOLN, 1861.

ABRAHAM LINCOLN, the sixteenth President of the United States, succeeded Mr. Buchanan, and entered upon the duties of office in March, 1861.

It was during Lincoln's administration that one of the most bloody civil wars (1863—1865) took place between the Northern and Southern States, in consequence of the abolition of slavery. In that short time, 740 millions of pounds sterling were spent, and 656,300 men were killed.

The beginning of it, was the attack of Fort Finter by the Sudists, who wanted to separate themselves from the North. To this, Abraham Lincoln replied by the raising of 75,000 men, the blocus of the ports of the Carolinas, Virginia, etc. Everyone remembers the gigantic exertions made by each side

to attain its purpose, and the heroic deeds achieved by both during this long and sanguinary war, resulting in the complete victory of the North, and the lamentable death of Abraham Lincoln.

The war of secession was just ended, peace was restored, and business was progressing actively everywhere, when this foul act was perpetrated. On the 14th of April, 1865, the President and his wife assisted for the first time, since the war, to a theatrical representation, accompanied by Mrs. Harris and Mr. Rashburn. They occupied the front of the stage on the left of the theatre. The play represented, was a gay one, *Our American Cousin*. The President leaning forward, his head between his hands, was entirely absorbed with the play, when a shot was heard, and at the same time a man was seen jumping in the front of the stage, a dagger in hand, and crying *Sic semper tyrannis*. All the spectators rose, the murderer ran away in the lobby, pursued by a lawyer, Mr. Stuart, who very nearly overtook him, but the murderer escaped by shutting a door in his face.

The President had been shot in the head. He was carried immediately into a house, close by the theatre, where he died the next morning at 7.20.

As to the murderer, who had been able to make his escape on horseback, he had been recognised by another actor, one of his comrades, as one named John Wilkes Booth. This Booth had been mixed up in many political events. He was an enthusiastic Sudist; he declared that he murdered President Lincoln to avenge the defeat of the Sudists. He was discovered by the police in a hut near Port Royal, Maryland, where he had taken refuge with one of his accomplices. Summoned to deliver themselves up, the two criminals wavered. The accomplice, Harold, surrendered, but Booth decided to resist. Then the police set fire to the hut, and when Booth appeared, trying to escape, he was shot. The corpse was deposited on board a monitor, from where it disappeared several days after. This dreadful drama ended in absolute mystery, and the slavery, to the maintenance of which Booth had sacrificed President Lincoln, was nevertheless definitely abolished.

On the morrow of the assassination of President Lincoln, Minister Seward was also murdered.

Abraham Lincoln was born the 12th of February, 1809, in the State of Kentucky. Son of a pioneer, from the early age of seven, he took part in the hard labour of clearing land.



Without a regular instruction, and obliged to work for his living, At the age of nineteen, he made a voyage to New Orleans, working on board of a boat to pay his passage. Then he turned carpenter, grocer, etc., and, lastly, a soldier, fighting the Indians, after which he began to study alone, and succeeded so well, that he was able to pass his examination as a lawyer. From that date, he began his political career.

During four sittings, he took part in the Legislature of Illinois. From 1847 to 1849, he was a Member of the Congress. In 1852, he joined the Abolitionists, and in November, 1860, he was elected President of the United States. He placed at the head of his Cabinet Messrs. M. Seward and Cameron. In 1861, he started from Springfield to Washington, where he was enthusiastically received; but it has been said that even then, notwithstanding the triumphal reception made to him, he had already misgivings about his security.

In 1864, he was re-elected for the second time with an immense majority.

The Atlantic Telegraph, connecting Europe and America, was completed in 1862, during his first term of office.

### ANDREW JOHNSON, 1865—1869.

The consequence of the atrocious act committed by Booth, was that Andrew Johnson became the seventeenth President of the United States according to Constitution. He took office in April 1865, and during the whole of his term he was in contest with the other powers. The functionaries proposed by him, were not accepted by the Senate, and even his Ministers were hostile to him. He was also put on his trial, but discharged.

Andrew Johnson was born in Raleigh, Carolina, on the 29th of December, 1806.

He lost his father at the early age of four. At ten, he was apprenticed to a tailor, and remained with him seven years without having ever been to school, but in learning his trade, he made up his mind to learn at all cost, and so he did, taking several hours out of his sleep for that noble purpose. When he left his master, he worked for a while at day wages, soon after he went West, taking with him his mother, whom he maintained from his work. He stopped at Greenwich, Tennessee, where he worked as a journeyman. He married there, and after a time he worked on his own account. With the help of his wife, he learned to write, and acquired some

elementary knowledge. In 1828, he was elected Alderman of his village. In 1830, he was elected Mayor. In 1843, he was elected Member of the Congress, and in 1863, Governor of Tennessee. In 1864, he was elected Vice-President, hence, his re-emplacing President Lincoln, when this last was murdered.

President Johnson died the 31st of July, 1875, in the county of Carter.

### ULYSSE SIMPSON GRANT, 1869—1877.

ULYSSE SIMPSON GRANT, the eighteenth President of the United States, entered upon the duties of his office in March, 1869. He was so popular and so esteemed by all parties that at the end of his first term, in 1873, he was re-elected without opposition. It was during his second term of office that the Centennial Exhibition of Philadelphia, which was such a great success, was decided upon, and successfully organized.

This Exhibition was the first step of reconciliation between the Northern and Southern States. General Grant's peaceful administration will always be remembered as that of reconciliation, peace and progress. In 1869, the Pacific Railway was opened during his administration.

Ulysses Simpson Grant was born at Point Pleasant, Ohio, on the 27th of April, 1822. At the age of seventeen, he entered at the Military School of Westpoint. He left in 1843 as a Second Lieutenant in the Infantry. In 1848, he took a distinguished part in the Mexican War, was promoted Lieutenant after the battle of Molino del Rey, and Captain after that of Chapultepec, in September, 1847.

He left military service in 1854, and took the direction of a tanyard, established by his father; after which he started as a farmer, in the county of San Luis, Missouri. In 1860, he went away to Galena, Illinois, where he was busy in the same pacific business when the war was declared between the North and the South. In the month of April, 1861, the Governor of Illinois appointed him *Aide-de-camp* to the Chief Commander of the State Militia. Soon after, he was nominated Colonel of the 20th Regiment, then General of the Illinois Volunteers. He assisted in that capacity to many sanguinary battles, and achieved great success, especially at the battle of Wickbury, which made him famous among his countrymen. His popularity was so great after the battle of Richmond, that he was unanimously elected President of the United States. He received numerous

addresses from all parts of the country. In his short inaugural address on the day of his installation as President, he manifested that he did not belong to any particular political party. On the 6th of November, 1872, he was re-elected for another term with a great majority. At the end of his second term, he visited Europe, where he was welcomed by all. A suitable pension was voted him, when he retired from office.

### RUTHERFORD B. HAYES, 1877—1881.

RUTHERFORD B. HAYES, the nineteenth President of the United States, entered into possession of the presidential chair in March, 1877. I was in Philadelphia when the election took place, and I have previously given a description of what these elections are in the United States. If not seen, one could hardly believe what expenses and what excesses are occasioned by the election of a President in that country; but what is admirable is the way how every one retires to his own business when the election is over. The Phonograph was invented by Edison, in 1877, during Hayes' term of office.

Rutherford Birchard Hayes was born on the 4th of October, 1822, in Delaware, Ohio. He went first to the College of Kenyon. From that place, he went to the University of Cambridge, where he studied law. In Cincinnati he acted as solicitor and acquired fame as a lawyer. When the war of secession was declared, he engaged himself as a private soldier, but quickly distinguished himself, and was successively promoted from Lieutenant to General. At the end of the war, he retired from the service, but soon after he was sent to Congress, where he represented his county. After that, he was appointed twice Governor of Ohio. In 1876 he was chosen as a candidate by the Republicans, and was elected President of the United States.

### JAMES A. GARFIELD, 1881.

JAMES A. GARFIELD, the twentieth President of the United States, entered upon the duties of the office in March 1881, but he occupied that post only for a few months, having been shot at the railway station by the murderer, Charles Guiteau, a fanatic, on the 5th of July, 1881. He was successively transported to Longbranch and elsewhere, and for a little time it was thought that he would recover, but on the 19th of September, he died at Longbranch from the consequences of his wounds. A national subscription was made



in favour of his widow. Two millions five hundred thousand dollars were raised for that purpose. James Abraham Garfield was born the 19th of November, 1831, at Orange, Ohio. At an early age, he had to work for his living and that of his mother, which he always helped as much as he could. He worked as a journeyman carpenter, and also as a steersman on a boat. In the evening, he used to go to a primary school, and learn all that he could. In 1849, he entered the College of Chester, Ohio, and one year after he obtained his brevet as Schoolmaster. In 1880, he was elected President of the United States.

### CHESTER A. ARTHUR, 1881—1885.

According to Constitution, Mr. Chester A. Arthur, Vice-President, became the twenty-first President of the United States.

Chester A. Arthur was born in Fairfield, Franklin County, Vermont, on the 5th of October, 1830. His father emigrated from Ireland to the United States in his eighth year, and died in Newtonville, near Albany, in October, 1875. Chester A. Arthur was educated at Union College, and was graduated in the class of 49. After leaving college, he taught a county school during two years in Vermont, and then having managed by rigid economy to save about \$500 he started for New York, and entered the law office of ex-Judge Culver as a student. After being admitted to the bar, he formed a partnership with his friend, Henry D. Gardiner, with the intention of practising in the West, but in the end they returned to New York, where they entered upon a successful career almost from the start. Soon after he married the daughter of Lieutenant Herdon, United States Navy, who was lost at sea. Chester A. Arthur rendered great services in the emancipation of slaves, and won several cases in their favour. Previous to the outbreak of the Secession War, Chester A. Arthur, was Judge Advocate of the 2nd Brigade of the New York State Militia, and Governor Edwin D. Morgan, soon after his inauguration, selected him to fill the position of Engineer-in-Chief of his staff. In 1861, he held the post of Inspector-General, and soon afterwards was advanced to that of Quartermaster-General, which he held until the expiration of Morgan's term of office. No higher encomium can be passed upon him than the mention of the fact that although the war account of the State of New York was at least ten times larger than that of any other state, yet

it was the first audited and allowed in Washington, and without the deduction of a dollar, while the Quartermaster's accounts from other States were reduced from \$10,000,000 to \$1,000,000. When Mr. Arthur became Quartermaster-General he was poor. When his term expired he was poorer still.

He had opportunities to make millions unquestioned. His own words in regard to this matter amply illustrate his character. *"If I had misappropriated five cents, and on walking down town saw two men talking on the corner together, I would imagine they were talking of my dishonesty, and the very thought would drive me mad."*

At the expiration of Governor Morgan's term, Mr. Arthur returned to his law practise, and the firm of Arthur and Gardiner prospered exceedingly. Gradually he was drawn into the arena of politics. He nominated, and, by his efforts, elected the Hon. Thomas Murphy a State Senator. When the latter resigned the collectorship of the Port of New York, November 20th, 1871, President Grant nominated General Arthur to the vacant position, and four years later when his term expired re-nominated him, an honour that had never been shown to any previous collector in the history of the Port.

When James A. Garfield was elected President of the United States, in 1880, General Arthur was unanimously elected Vice-President. On the 4th of March, 1881, he delivered a brief but eloquent inaugural address and assumed his place as the second officer of the Republic.

Immediately after the death of President Garfield, General Arthur took the oath of office as President of the United States. The administration of the oath was followed by the President's brief inaugural address.

During Arthur's term, efforts were made to strengthen the relations of the United States with the other American nationalities. Representations were made by the Administration with a view to bringing to a close the war between Chili and the allied States of Peru and Bolivia.

President Arthur advised the establishment of a monetary union of the American countries to secure the adoption of a uniform currency basis. Provision for increased and improved consular representation in the Central American States was made. Negotiations were conducted with Colombia for the purpose of renewing and strengthening the obligations of the United States as the sole guarantor of the integrity of Columbian territory, and of the neutrality of any interoceanic canal to be constructed across the Isthmus of Panama.

From the British Government, a full recognition of the rights and immunities of naturalized American citizens of Irish origin was obtained, and all such that were under arrest in England or Ireland, as suspects, were liberated.

The reduction of letter postage from 3 cents for each half-ounce to 2 cents for one ounce was adopted. The fast mail and free delivery system were largely extended.

The act to regulate and improve the civil service of the United States was passed January 16th, 1883.

It was declared at the following Presidential Convention that "in the administration of President Arthur we recognize a wise, conservative, and patriotic policy, under which the country has been blessed with remarkable prosperity, and we believe his eminent services are entitled to and will receive the hearty approval of every citizen."

Mr. Arthur died suddenly of apoplexy, at his residence, No. 123, Lexington Avenue, New York City, Thursday morning, November 18th, 1886. President Cleveland, and his Cabinet, Chief-Justice Waite, ex-President Hayes, James G. Claime, Generals Sherman, Sheridan, and Schofield, and the surviving members of President Arthur's Cabinet, were in attendance.

## GROVER CLEVELAND, 1885—1889.

GROVER CLEVELAND, the twenty-second President of the United States, took possession of the chair in March, 1885. It was during his administration that it was decided to co-operate officially to the Paris International Exhibition of 1889, and it was a great success for that country. Their display was conspicuous, and courted the attention of all visitors. General Franklin, the Chief Commissioner, by his energy and affability, contributed greatly to that end.

Four new States were added to the Union by Congress, that of North Dakota, South Dakota, Washington, and Montana. Electricity was adopted for traction on 436 tramways, on 3,522 miles of track.

Stephens Grover Cleveland was born at Caldwell, New Jersey, on the 18th of March, 1837. He studied at Clinton's Academy. After that, he entered as clerk in a commercial house at Fayetteville. When in Buffalo with his uncle, he studied law, and was admitted to the Court of that town in 1859. In 1870, he was elected sheriff of the County of Erie, and at the expiration of his office, he took the direction of a



lawyer's office under the name of Cleveland, Biosel & Sicard, which prospered immensely. In 1881, he was elected Mayor of Buffalo, in which capacity he acted so honourably and so satisfactorily that, in 1882, he was elected Governor of the State of New York. In 1884, he was elected President of the United States.

### BENJAMIN HARRISON, 1889—1893.

BENJAMIN HARRISON, the twenty-third President of the United States, entered upon the duties of office in March, 1889. His administration will always be remembered as that of the one during which was decided the celebration of the four-hundredth anniversary of the discovery of America, by Christopher Columbus, in the form of a gigantic International Exhibition, to be held at Chicago in 1894, which official dedication took place the 21st of October, 1893. In consequence of Mrs. Harrison's illness, the President could not preside at the ceremony, and was replaced by Vice-President Morton. Another great event was the celebration of the centenary of Washington, which took place with great solemnity on the 30th of April, 1889.

The administration of President Harrison will also be remembered as that of the passing of the memorable McKinley Tariff, which has caused much dissatisfaction, not only amongst many classes of society in the United States, but also in all foreign countries, and which has probably been the chief cause of his not having been re-elected for a second term of office, as many thought he would be.

Two new States were added to the Union, that of Wyoming and Idaho. Benjamin Harrison was born at North Bend, Ohio, on the 20th of August, 1833. He is the grandson of William Henry Harrison, the ninth President of the United States, who died in 1881. He studied at the University of Miami, Oxford, and practiced as a barrister at Indianapolis, his place of residence. In 1862, he entered in the federal army, first as Lieutenant. He fought in many battles and at the end of the war, he was elected Senator and remained so during six years, 1881—1887. In 1884, he supported the candidacy of Blaine against Cleveland. In 1888, he was elected President of the United States.

### GROVER CLEVELAND, 1893.

GROVER CLEVELAND, the twenty-fourth President of the United States, was elected in November, 1892, with Mr. A. E.

Stevenson, as Vice-President. He entered upon the duties of his office for the second time in March, 1893.

On the first of May, 1893, he opened the World's Columbian Exhibition, the greatest manifestation ever held in honour of PEACE AND LABOUR.

As everyone knows it has been a great success.

Many grand things are expected from President Cleveland's Administration, such as the Repeal of the McKinley Tariff, replaced by a fair trial of Free Trade; the help of the United States to conclude an International treaty for the completion of the Panama and Nicaragua Canals. And we hope that President Cleveland will be successful in his endeavours, and that his name will ever be remembered as the one who will have greatly contributed to the completion of these great undertakings. Future will tell!







*Thalurania Felskii*, Tacz. P.Z.S., 1874, p. 138.

*Black banded Wood Nymph*, Gould, Mon. Troch., vol. ii., p. 103.

*Tschudi's Wood Nymph*, Gould, Mon. Troch., vol. ii. p. 103.

*La Thaluranie à bande noire*, Muls., Hist. Nat. Ois, Mou., 1876, vol. iii., p. 75.

*Felshy's Wood Nymph*, Gould, Mon. Troch, Suppl., 1886, p. 39.

*Habitat*.—Peru, Columbia, and Ecuador.

*Male*.—Head and neck bronze, rest of upperside shining green. Throat emerald-green, extending to the breast, bordered by a narrow black band. Shoulders and rest of underside Prussian blue, under tail-coverts and tail steel-blue. Wing-coverts bronze-green. Wings purple-brown. Bill and feet black.

Total length,  $4\frac{1}{2}$ in. Wing,  $2\frac{1}{4}$ . Tail,  $1\frac{6}{8}$ . Culmen,  $\frac{5}{8}$ .

*Female*.—Upperside shining grass-green, bronzy on the head. Underside gray. Median rectrices green, lateral green with bluish tips and a very small gray tip, the two uttermost ones brown at base, then bluish with gray tips.

I have some specimens from Columbia, Ecuador, Amazons, and Peru, collected by Messrs. Buckley, Whitely, and Hanxwell.

#### 148. THALURANIA BOLIVIANA, N. Sp.

*Bolivian Wood Nymph*.

*La Thaluranie de Bolivie*.

*Habitat*.—Bolivia.

*Male*.—Exactly the same in colouration as the preceding species, except that the emerald of the throat does not extend so much on the breast, and is not separated from the breast by a black band. The colour of the breast and abdomen is purplish in this species.

Total length,  $4\frac{1}{2}$ in. Wing,  $2\frac{2}{8}$ . Tail,  $1\frac{7}{8}$ . Culmen,  $\frac{6}{8}$ .

*Female*.—Like the preceding species, but darker on the underside.

My specimens of this new species, were collected in Bolivia by Buckley.

GENUS XLIX. *Gmelinius*, n.g.

ORNISMYIA, Lesson, Hist. Nat., Ois. Mou., Tab. 10.

TYPE: *T. bicolor*, Gmélin.

Bill straight, graduating to a point, slightly longer than the head. Tail slightly forked. Rectrices gradually longer from the medium to the outermost ones, pointed. Wings long, reaching the end of tail. Tarsi clothed. Sexes unlike.

*Habitat*.—Dominica (West Indies).

I dedicate this new genus to the memory of Gmélin.

149. GMELINIUS, BICOLOR, Gmel. Syst. Nat., 1788, p. 496.

*Ornismyia bicolor*, Gmel. Syst. Nat., 1778, p. 496.

*Ornismyia wagleri*, Less., Hist. des Ois. Mou., 1829, p. 203.

*Hylocharis wagleri*, Gray, Gen. Birds, vol. i., p. 114.

*Caeligena wagleri*, Riech., Troch. Enum., 1855, p. 3.

*Thaluranian wagleri*, Gould, Mon. Troch., vol. ii., p. 109.

*Wagler's Wood Nymph*, Gould, Mon. Troch., vol. ii., p. 109.

*La Thaluranie de Wagler*, Muls., His. Nat. Ois. Mou., 1876, t. iii, p. 81.

*Habitat*.—Dominica (West Indies) not Brazil.

*Male*.—Entire head and throat deep blue, slightly metallic. Upperside dark shining green. Tail steel-blue. Tail-coverts greenish-blue. Underside metallic grass-green, golden on sides of breast and flanks. Wings dark purplish-brown. Maxilla black. Mandible flesh colour tipped with black.

Total length,  $3\frac{3}{4}$  in. Wing,  $2\frac{3}{8}$ . Tail,  $1\frac{3}{4}$ . Culmen,  $\frac{5}{8}$ .

*Female*. — Upperside bronzy-green. Uppertail-coverts bluish-green. Underside dull white spangled, with green on the sides of breast and flanks. Outer-tail feathers tipped white, rest of tail-feathers green, broadly marked with blue on the terminal part.

It is a rare species, and it is only since a short time that we know with certainty that this species is not Brazilian, as all former authors have constantly told us, but a native of Dominica, West Indies. I think Mr. Ober, who has collected largely in the West Indies, is the naturalist to whom we are indebted for the exact habitat of this species.



The differences between this species and all those included amongst the genus *Thalurania*, are such, that I have not hesitated in proposing a new genus for it.

GENUS L. **Phaeoptila**, Gould, Int. Troch., 1861, p. 169.

DOLEROMYIA, Muls., Hist. Nat. Ois. Mou., t. i, p. 207.

TYPE: *P. sordida*, Gould.

Bill longer than the head, slightly curved, nostrils exposed, wings long, nearly reaching the end of tail. Tail short, slightly forked, medium rectrices shorter, lateral and outermost ones, slightly and gradually longer, all of them broad. Tarsi clothed. Sexes unadorned, nearly alike.

*Habitat*.—Mexico.

150. PHAEOPTILA SORDIDA, Gould, Ann. Mag. Nat. Hist., 1859, p. 97.

*Uranomitra sordida*, Cab. and Heine., Mus. Hein, 1860, t. iii., p. 41.

*Doleromyia sordida*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 207.

*Dusky Humming-bird*, Gould, Mon. Troch., vol. 5, p. 338.

*I.a Doleromye sordide*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 207.

*Habitat*.—Puebla, Oaxaca, (Mexico).

*Male*.—Upperside bronzy-green, brownish on forehead. Underside gray, washed with bronzy-green feathers on sides of breast and flanks. A tuft of white feathers on each side of lower part of vent. A white spot behind the eyes. Tail bronzy-gray. Wings silky-brown. Bill flesh colour, with black tips. Feet black.

Total length, 4in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{5}{8}$ . Culmen,  $\frac{7}{8}$ .

*Female*.—Same plumage as that of male, but paler gray on underside, with just a few bronzy-green feathers on sides of breast. Lateral rectrices largely tipped with pale gray.

I discovered this species in Oaxaca, South Mexico, and for a long time, Gould himself thought that it was the female of another species; but having dissected a good many specimens of both sexes, there is no doubt about it now. The types of this species are now in the British Museum. (Ex Gould Collection.)

GENUS LI. **Iache**, Elliot, Syn. Hum. Birds, p. 234.

CIRCE, Gould, Int. Troch., p. 168.

TYPE: *C. latirostris*, Swainson.

Bill longer than the head slightly curved. White spot behind the eyes. Wings long, reaching nearly the end of tail. Tail short, slightly forked, rectrices broad. Tarsi clothed. Feet small, hind toe short (Gould, l.c.). Sexes unlike.

*Habitat*.—Mexico.

151. IACHE LATIROSTRIS, Sw., Phil. Magas, 1827, p. 441.

*Ornismya lessoni*, Del., Rev. Zool., 1839, p. 15.

*Cyanophaia lazula*, Reich., Aufz. der Col., 1853, p. 10.

*Amazilia latirostris*, Reich., Aufz. der Col., 1853, p. 10.

*Hylocharis lazula*, Reich., Troch., Enum., 1855, p. 770.

*Circe latirostris*, Gould, Mon. Troch., vol. v., p. 338.

*Circe*, Gould, Mon. Troch., vol. v., page 338.

*La Circé, à large bec*, Muls., His. Nat. Ois. Mou., 1875 t. ii, p. 47.

*Habitat*.—Mexico.

*Male*.—Upperside bronzy-green, brownish on top of head. Throat bright sapphire-blue. Breast, abdomen and flanks shining green, washed with gray on flanks. Undertail coverts gray, with bronzy-green in centre of feathers. Tail steel blue, tipped with gray in young males. Wings pale brown. Bill flesh colour with black tips.

Total length,  $3\frac{6}{8}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{7}{8}$ .

*Female*.—Upperside bronzy-green. Underside dark gray. Tail bronzy-green at base, rest bluish-black, lateral feathers tipped with gray.

Rather a rare species. I collected some specimens near Mexico, the capital of the Republic.

\*152. IACHE MAGICA, Muls., and Verr., Ann. Soc. Lin. Lyon., 1872, t. 18, p. 110.

*Circe magica*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii, p. 49.

*La Circé magicienne*, Muls., Hist. Nat. Ois. M., 1875, t. ii, p. 50.

*Mazatlan Humming-bird*, Gould, Mon. Troch., Suppl., 1886, p. 96.

*Habitat*.—Mazatlan, Lower-California.

*Male*.—Upperside reddish-bronze. Throat and upperpart of breast metallic bluish-green. Underside bronzy-green, with a coppery lustre. Undertail-coverts white. Wings pale brown. Tail brownish-black, lateral feathers slightly tipped with gray. Bill red, tip black.

Total length,  $3\frac{3}{4}$  in. Wing,  $1\frac{2}{8}$ . Tail,  $1\frac{1}{8}$ . Culmen,  $\frac{3}{4}$ .

The Type (from Elliot's collection) is now the property of the Museum of Natural History, New York.

\*153. IACHE DOUBLEDAYI, Bourcier P.Z.S., 1847, p. 46.

*Hylocharis doubledayi*, Gray, Gen. Birds, vol. i., p. 114.

*Thaumantias doubledayi*, Bon. Consp. Gen. Av., 1850, vol. i., p. 78.

*Cyanophaia doubledayi*, Reich., Aufz. der Col., 1853, p. 10.

*Sapphironia circe*, Bon. Rev. and Mag. Zool, 1814, p. 156.

*Circe doubledayi*, Gould, Mon. Troch., vol. v., p. 339.

*Doubleday's Humming Bird*, Gould, Mon. Troch., vol. v., p. 339.

*La Circé de Doubleday*, Muls., Hist. Nat. Ois. Mou., 1875, vol. ii., p. 45.

*Habitat*.—Chihuitan (S. Mexico).

*Male*.—Top of head metallic bluish-green. Upperside and abdomen dark bronzy-green with a bluish shade on the abdomen. Throat brilliant blue. Undertail-coverts dark brown, edged with gray. Wings pale brown. Tail steel-blue tipped with gray. Bill red, tip black.

Total length,  $3\frac{3}{16}$  in. Wing,  $1\frac{7}{8}$ . Tail,  $1\frac{5}{16}$ . Culmen,  $\frac{11}{16}$ .

Bourcier's specimen is in Elliot's collection.

\*154. IACHE NITIDA, Salv. and Godm. Ibis., 1889, p. 240.

*Dark blue Humming-bird.*

*l'Oiseau mouche bleu foncé.*

*Habitat*.—Guerrero (Mexico).

*Male*.—Closely allied to *I. doubledayi*, but the whole throat



and breast are of a richer blue, and the head also is shining blue, not green.

The type of this fine species is in the collection of Mrs. H. H. Smith.

\*155. IACHE LAWRENCEI, Ridgw, Mon. N.A. Birds., p. 320.

*Iache Lawrencei*, Berlepsch, M.S.

*Lawrence's Humming-bird*.

*L'Oiseau mouche de Lawrence*.

*Habitat*.—Tehuantepec, (S. Mexico).

*Male*.—Above metallic bronze-green, including upper tail-coverts, the hind neck more grass-green, and the forehead brilliant metallic greenish-blue, passing into shining green on crown; entire chin and throat deep metallic blue with a purplish cast in certain lights; remaining under parts bronzy-green or greenish-bronze. Tail forked.

Length of wing, 1-90. Tail, 1-50, Culmen, 0-65.

This genus forms the natural passage, from THALURANIDÆ to CHLOROLAMPIDÆ.

With the genus *Phaeoptila*, I have placed both in this family, because they are very closely allied to my new genus GMELINIUS.

## FAMILY VII. CHLOROLAMPIDÆ.

### OR FAMILY OF EMERALDS.

Bill flesh colour with black tips, as in genus *Chlorolampis*, gradually passing to black, as in the genera *Prasitis* and *Panychlora*, about the same length as the head, straight, rather wide at base, and terminating to a sharp point. Body small. Wing long and narrow. Tail varying from very deeply forked to even, rectrices rounded in some genera, narrow and pointed in others. Sexes unlike; the underside of males are always brilliantly coloured; that of the females dull whitish-gray. Tarsi clothed.

TYPE CHLOROLAMPIS, Cabanis, Mus. Hein., 1860. t. iii. p. 47.

GENUS LII., **Chlorolampis**, Cab., Mus. Heine, 1860, t. iii., p. 47.

TYPE: *Trochilus auriceps*, Gould.

Bill about as long as the head, straight, rather wide at base, and terminating to a sharp point. Wings long. Tail long and forked, two of the median rectrices very short and even, the next one, one-third longer, the two outermost ones narrow and long, the last one twice as long as the median rectrices, all of them being semi-rounded at the points. Feet small. Tarsi clothed. Sexes unlike.

*Habitat*.—Mexico.

156. CHLOROLAMPIS AURICEPS, Gould, Jard, Contr., Orn., 1852, p. 137.

*Sporadinus auriceps*, Bon., Rev. and Mag. Zool, 1854, p. 223.

*Chlorostilbon auriceps*, Gould, Mon. Troch, vol. v., p. 350.

*Long-Tailed Emerald*, Gould, Mon. Troch, vol. v., p. 350.

*Le Chlorolampe à tête d'or*, Muls. Hist. Nat. Ois. Mou., 1875, to ii, p. 80.

*Habitat*.—Mexico.

*Male*.—Crown metallic golden. Upperside golden-green. Throat metallic yellowish-green. Breast and abdomen metallic golden. Vent white. Wings purplish-brown. Tail long, deeply forked, bluish-black, all but the outermost feathers tipped with large gray spots. Maxilla flesh colour at base, rest black. Mandible flesh colour with black tip.

Total length,  $3\frac{3}{4}$  in. Wing,  $1\frac{3}{4}$ . Tail,  $1\frac{6}{8}$ . Culmen,  $\frac{1}{2}$ .

*Female*.—Upperside bronzy-green. Underside dull gray. Median rectrices shining green; lateral green at base, then black with gray tips, outermost ones green at base, then gray, then black with grayish tips.

This very rare species was discovered by Mr. Flores d' Arcais.

I have only one male specimen, Ex Coll Costa de Beauregard.

157. CHLOROLAMPIS FORFICATA, Ridgw. Pr. U.S., Nat. Mus. vol. viii., p. 574.

*Forked Tail Emerald*.

*Le Chlorolampe à quene fourchue.*

*Habitat.*—Yucatan, Mexico.

*Male.*—Crown of head golden. Upperside bronze-green. Underside bright metallic green. Wings purplish-brown. Tail steel-blue with a broad bluish-gray spot at tips of the four central rectrices. Vent white. Bill flesh colour with black tips.

Total length,  $3\frac{6}{8}$  in. Wing,  $1\frac{7}{8}$ . Tail,  $1\frac{6}{8}$ . Culmen,  $\frac{1}{2}$ .

*Female.*—Upperside shining green with bronzy reflections, especially on the head. Underside gray with green feathers on sides of breast and on flanks. Vent white. Wings bluish-black. Median rectrices green at base, rest steel-blue, lateral green at base, then steel-blue with grayish tips, outermost bluish-black, with gray in the middle internally, and a large white tip.

Total length,  $3\frac{1}{2}$  in. Wing,  $1\frac{6}{8}$ . Tail,  $1\frac{2}{8}$ . Culmen,  $\frac{1}{2}$ .

My specimens were collected by Mr. Gaumer in Yucatan.

158. CHLOROLAMPIS CANIVETI, Less. Ois. Mouch, 1829, pp. 174-177.

*Hylocharis caniveti*, Gray, Gen., Birds, vol. i. p. 114.

*Thaumatias caniveti*, Bon., Consp., Gen., Av., 1850, vol. i., p. 78.

*Riccordia caniveti*, Reich. Aufz. der Colib., 1853, p. 8.

*Sporadinus caniveti*, Bon. Rev. and Mag, Zool., 1854, p. 224.

*Chlorestes caniveti*, Reich., Troch., Enum, 1855, p. 4.

*Chlorolampis caniveti*, Cab. and Hein., Mus. Hein., t, iii., p. 47.

*Canivet's Emerald*, Gould, Mon. Troch., vol. v. p. 351.

*Le Chlorolampe do Canivet*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 82.

*Habitat.*—Mexico.

*Male.*—Crown metallic gold. Upperside bronzy-green. Underside metallic golden-green, with greenish reflections on throat and breast. Wings, purplish-brown. Tail, bluish-black. All the feathers with grayish tips, but more conspicuous on the three median. Maxilla flesh colour for half its length, rest black. Mandible flesh colour with black tips.

Total length,  $3\frac{2}{8}$  in. Wing,  $1\frac{7}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{9}{16}$ .



*Female*.—Upperside bronzy-green, greenish on upper tail-coverts. Underside gray, tinged with bronze feathers on sides of breast and flanks. Middle pair of rectrices bronze-green, the next three green at base, then steel-blue with white tips, the outermost black at base, then gray with a large subterminal bluish-black bar, and white tips. Ear-coverts black. A narrow line of whitish-gray behind the eye.

This pretty species is common in Mexico. I have killed many specimens at Tospam, near Cordoba. It was discovered by Delattre, and dedicated by Lesson to Mr. Canivet, a French naturalist.

159. CHLOROLAMPIS OSBERTI, Gould, Int. Troch., 1861, p. 174

*Osbert's Emerald*, Gould, Mon. Troch., vol. v., p. 352.

*Le Chlorolampe d'Osbert*.

*Habitat*.—Guatemala, Nicaragua.

The only difference between this species and the preceding one, consists in the colour of the underside, which is metallic emerald-green on the throat and breast, and the colour of its rectrices which are steel-blue with a narrow bronze tip on central feathers, the tail is also shorter.

Total length,  $3\frac{2}{8}$  in. Wing,  $1\frac{6}{8}$ . Tail,  $1\frac{2}{8}$ . Culmen,  $\frac{5}{8}$ .

I have one specimen from Bourcier, collected by Delattre in Nicaragua, labelled *Clorestes adusta*, which is precisely alike.

160. CHLOROLAMPIS SALVINI, Cab. and Hein., Mus. Hein., 1860, t. III, p. 48.

*Salvin's Emerald*.

*Le Chlorolampe de Salvin*.

*Habitat*.—Costa Rica.

*Male*.—Crown golden. Upperside golden-green. Underside metallic emerald-green. Wings purple-brown. Tail steel-blue with a narrow bronze band at tips of central feathers. Maxilla black. Mandible flesh colour for two-thirds of its length, rest black.

Total length,  $3\frac{1}{2}$  in. Wing, 2. Tail,  $1\frac{2}{8}$ . Culmen,  $\frac{1}{2}$ .

*Female*.—Exactly like the female of *C. caniveti*, excepting the mandible which is flesh colour at base only, the rest black, and the tips of rectrices, which are slightly more rounded.

The specimens which I have of this species were collected by me at San José, Costa Rica, which lays on the Atlantic slope. I think the great difference in the colouring of the underside and bill entitles it to be considered as a species.

GENUS LIII. **Sporadinus**, Bon., Rev. and Mag. Zool, 1854, p. 255.

RICORDIA, Reich., Aufz. der Col., 1853, p. 10.

SPORADICUS, Cab. et Hein., Mus. Hein., 1860, t. iii., p. 25.

ERASMIA, Heine, Journ fur Ornith, 1863, p. 91.

MARSYAS, Muls., Cat. Ois. Mou., 1875, p. 13.

TYPE: *S. ricordi*, Gervais.

Bill as long as the head, straight. Nostrils naked. Wings long, reaching near the end of the tail. Tail long, deeply forked, tips of rectrices semi-rounded. Throat metallic. Tarsi partly clothed. Sexes unlike.

*Habitat*.—West Indiae Islands.

161. SPORADINUS RICORDI, Gerv. Rev. and Mag. Zool, 1835, pl., 40-42.

*Ornismya parzudaki*, Less., Rev. Zool, 1838, p. 315.

*Orthorhynchus ricordi*, Della, Sagra. Hist. Cuba, 1840, p. 128.

*Hylocharis ricordi*, Gray. Gen. Birds, vol. i., p. 114.

*Ricordia raimondi*, Reich., Aufz. der Col., 1853, p. 8.

*Chlorestes raimondi*, Reich. Troch. Enum., 1855, p. 4.

*Sporadicus ricordi*, Cab. and Hein., Mus. Hein., 1860, t. iii. p. 25.

*Sporadinus bracei*, Lawr, Ann. N.Y. Acad, Scien, 1877, p. 50.

*Ricord's Humming-bird*, Gould, Mon. Troch., vol. v., p. 348.

*Le Sporadin de Ricord*, Muls., Hist. Nat. Ois. Mou., 1875, vol. ii., p. 75.

*Habitat*.—Cuba and Bahamas.

*Male*.—Upperside bronzy-green. Underside metallic, emerald-green, bronzy on flanks and abdomen. Wings purplish-brown. Median rectrices bronze, lateral purplish-

black, with bronze on outer webs. Undertail-coverts white. Maxilla black. Mandible flesh colour with black tip. In one specimen, collected by Mr. Gaumer in Cuba, the mandible has only the base flesh colour.

Total length,  $3\frac{7}{8}$  in. Wing, 2. Tail,  $1\frac{5}{8}$ . Culmen,  $\frac{5}{8}$ .

*Female*.—Upperside bronze-green. Underside grayish white, washed with green on side of breast and flanks, the outermost rectrices have bronze tips.

Same size as male.

This species was discovered by Mr. Alexandre Ricord, and it was dedicated to him by Mr. Gervais. It is rare in the collections.

162. SPORADINUS ELEGANS, Vieill, Ois. Dor., 1802, vol. i., p. 32.

*Ornismya swainsoni*, Less., Ois., Mou., 1829, p. 197.

*Trochilus swainsoni*, Nat. Lib. Hum. Birds, 1833, vol. ii., p. 132.

*Hylocharis elegans*, Gray, Gen. Birds, 1844-49, vol. i., p. 114.

*Lampornis elegans*, Bon. Consp., Gen. Av., 1850, vol. i., p. 72.

*Ricordia elegans*, Reich., Aufz. der Col., 1853, p. 8.

*Chlorestes elegans*, Reich., Troch. Enum., 1855, p. 4.

*Sporadicus elegans*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 25.

*Sto. Domingo Humming-bird*, Gould, Mon. Troch., vol. v., p. 347.

*Le Sporadin élégant*, Muls., Hist. Nat. Ois. Mou., vol. ii., p. 72.

*Habitat*.—Haiti and San Domingo.

*Male*.—Upperside bronze-green. Throat bright metallic green. Centre of breast black. Rest of underside shining dark green. Wings purplish-brown. Tail dark brown, with a bronze lustre on tips. Maxilla black. Mandible flesh colour with black tip.

Total length,  $4\frac{1}{2}$  in. Wing,  $2\frac{3}{8}$ . Tail, 2. Culmen,  $\frac{6}{8}$ .

*Female*.—Upperside bronze-green, grayish on head. Underside brownish-gray. Central tail feathers bronze-green, rest



gray, with subterminal black bars, some of the feathers glossed with green.

I have only one male specimen of this very rare species. Ex Costa de Beauregard's collection.

\*163. SPORADINUS MAUGEI, Vieill., Dict. Hist. Nat., 1817, t. vii., p. 568.

*Ornismyia maugéi*, Less. Ois. Mou., 1829, p. 194.

*Thaumatias ourissia*, Bp. Consp., Gen. Av., 1850, p. 79.

*Trochilus maugéi*, Sund. Oefv. K. Vet. Akad. För., 1869, p. 600.

*Chorestes gertrudis*, Gundl. Journ. fur. Ornith., 1874, p. 315.

*Marsyas maugéi*, Muls., Cat. Ois. Mou., 1875, p. 13.

*Chlorolampis maugéus*, Gundl., Ann. Soc. Esp. Hist. Nat., 1878, t. vii., p. 225.

*Maugé's Humming Bird*, Gould, Mon. Troch., vol. v., p. 349.

*Le Sporadin de Maugé*, Muls., Hist. Nat. Ois. Mou., 1875, vol. ii., p. 78.

*Habitat*.—Porto Rico.

*Male*.—Entire plumage bright green, the feathers showing a golden tinge when held in the light. Throat dark blue, golden-green in some lights. Tail dark blue. Wings dark brown.

*Female*.—Underpart dull white, the central feathers of the tail green, the rest grayish-green with a band of blue near the tip, outer feathers tipped with grayish white.

Length, 3.35. Wing, 2. Tail, 1.25, Bill, .55.

The above descriptions were taken from the fine work, *Birds of the West Indies*, by Cory, 1889, p. 154.

It is a very rare species and one of my desiderata.

It was discovered at Porto Rico by Mr. Maugé, and dedicated to him, by Vieillot. The types are in the Paris Museum.

Mr. Mulsant in his work, Hist. Nat. des Ois. Mouches, has described a fourth species under the name of *S. incertus*; but it is the same as *S. elegans*.

GENUS LIV. **Chlorostilbon**, Gould, Int. Troch., 1861, p. 175.

CHLORESTES, Reich., Aufz. der Colib., 1853, p. 10.

CHLOROLAMPIS, Cab. and Hein., Mus., Hein., 1860, t. iii., p. 47.

MERION, Muls., Hist. Nat. Ois. Mou., 1875, t. iii. p. 92.

TYPE.—*T. pucherani*, Bourcier.

Bill about the length of the head, straight, rather broad and flat at base, terminating in a sharp point, flesh colour, with black tips, or all black. Wings long, reaching nearly the end of tail. Tail forked. Feet small. Tarsi clothed. Sexes unlike.

*Habitat*.—Mexico, to Argentine Republic.

164. CHLOROSTILBON PUCHERANI, Bourc and Muls., Rev. Zool., 1848, p. 271.

*Trochilus nitidissimus*, Licht, Mus. Bérol.

*Hylocharis pucherani*, Bp., Rev. and Mag. Zool., 1854, p. 255.

*Chlorestes pucherani*, Reich., Aufz. der Col., 1853, p. 7.

*Chlorostilbon igneus*, Gould, Int. Troch., p. 176.

*Chlorostilbon insularis*, Lawr. Ann. Lyc., N.Y., t. 7, p. 457.

*Hylocharis flavifrons*, Pelz, Orn. Bras., p. 33.

*Chlorostilbon bicolor*, Reich., Videusk, Medd. For. Kjob., 1870, p. 113.

*Chlorostilbon prasinus*, Gould, Mon. Troch., vol. v., p. 355.

*Brazilian Emerald*, Gould, Mon. Troch., vol. v., p. 355.

*Le Chlorostilbon de Pucheran*.

*Habitat*.—South Eastern Brazil.

*Male*.—Crown golden-green. Upperside dark shining green. Throat metallic bluish-green. Underside metallic golden-green. Wings purple-brown. Tail blue-black. Bill red at base, with black tip.

Total length,  $3\frac{3}{8}$  in. Wing,  $1\frac{1}{2}$ . Tail,  $1\frac{3}{8}$ . Culmen,  $\frac{7}{16}$ .

*Female*.—Upperside bronzy-green. Underside gray, tinged with bronze feathers on sides of breast and flanks. Median rectrices shining green, lateral bluish-black, with white tips. Same size as male.

This species was dedicated by Mess. Bourcier and Mulsant to Doctor Pucheran.

It is abundant in Brazil.

165. CHLOROSTILBON WIEDI, N. Sp.

*Wied's Emerald.*

*l'Emerande de Wied.*

*Habitat.*—Brazil.

*Male.*—Crown metallic-gold. Upperside golden-green. Throat metallic emerald-green. Breast, abdomen, flanks, and undertail-coverts metallic golden-green. Wings purplish-brown. Tail steel-blue. Maxilla, half of it, flesh colour, rest black. Mandible flesh colour with black tip.

Total length,  $3\frac{2}{8}$  in. Wing,  $1\frac{7}{8}$ . Tail,  $1\frac{3}{8}$ . Culmen,  $\frac{7}{16}$ .

*Female.*—Exactly like the preceding species.

I have several specimens of this new species, collected in Brazil, by Delattre, with the name of Wiedi on the label, so I thought very appropriate to keep it, in memory of Prince Maximilian de Wied.

\*166. CHLOROSTILBON EGREGIUS, Heine, Journ. fur Ornith, 1863, p. 198.

*Hylocharis bicolor*, Burm., S.Ueb., ii, p. 343.

*Hylocharis flavifrons*, Pelz., Orn. Bras. p. 33.

*Trochilus audeberti*, Var, Wied, Beitr. Nat. Gesch. Bras. t. iv., p. 69.

*Taquara's Emerald.*

*L'Emeraude de Taquara.*

*Habitat.*—Taquara, Brazil.

Intermedius quasi statura rostrique longitudine ac vigore inter *C. phaethontem*, et *C. pucherani*; hoc vero omnino similior splendore smaragdineo-virente potius quam flavido-aurescente, gutture splendidissime secundum quandam solis lucem in colorem sapphirino-smaragdineum nonnihil vergente.

Long tot., 3 " 7"', al, 1 "  $9\frac{1}{2}$ ". caud, 1 " 3". Culm., 8 ".

Type in Berlin Museum.



167. *CHLOROSTILBON SPLENDIDUS*, Vieill., Dict. Hist. Nat., 1817, t. vii., p. 361.

*Ornismya aureiventris*, D'Orb and Laf., Syn. Av. 1838, t. ii, p. 28.

*Trochilus phæton*, Bourc. Rev. Zool., 1848, p. 274.

*Clorestes phæton*, Reich., Aufz. der Colib., 1853, p. 7.

*Hylocharis phæton*, Bon. Rev. and Mag., Zool., 1854, p. 255.

*Chlorolampis phæthon*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 48.

*Glittering Emerald*, Gould, Mon. Troch. vol. v., p. 354.

*Le Chlorostilbon splendide*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 94.

*Habitat*.—Bolivia and Argentine Republic.

*Male*.—Upperside golden-green. Throat metallic emerald green. Breast and abdomen metallic golden-green, greenish on breast. Undertail-coverts, black at base, then shining green. Wings purplish-brown. Tail steel-blue. Maxilla flesh colour for half its length, rest black. Mandible flesh colour, with black tip. A tuft of white feathers beneath the vent.

Total length,  $3\frac{7}{8}$  in. Wing, 2. Tail,  $1\frac{3}{8}$ . Culmen,  $\frac{11}{16}$ .

*Female*.—Upperside bronze-green. Underside gray. Flanks bronzy. Tail bluish-black, two lateral feathers tipped with grayish-white.

I have several specimens of this rare species collected by Mess. Buckley in Bolivia, Flamand at Corrientes, Argentine Republic, and Laglaize at San Salvador, High Paraguay.

168. *CHLOROSTILBON CHRYSOGASTER*, Bourc, Rev. Zool., 1843, p. 101.

*Hylocharis chrysogaster*, Bon. Consp., Gen. Av., 1850, vol. i., p. 74.

*Chlorestes chrysogastra*, Reich., Aufz. der Colib., 1853, p. 7.

*Chlorolampis haeberlini*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 48.

*Chlorostilbon nitens*, Lawr, Ann. N.Y. Lye. Nat. Hist., 1861, p. 305.

*Ruddy-Breasted Emerald*, Gould, Mon. Troch., Suppl., 1886, p. 98.

*Le Chlorostilbon de la Colombie.*

*Habitat.*—Columbia, Panama.

*Male.*—Crown metallic golden-green. Upperside dark golden-green. Underside metallic emerald-green, golden on flank, abdomen, and undertail-coverts. Wing purplish-blue. Tail steel-blue, deeply forked. Maxilla black. Mandible flesh colour, with black tip. A tuft of white feathers on lower part of vent.

This species was discovered at Sta Marta, Columbia, by Delattre.

Type of Bourcier in my Collection.

169. CHLOROSTILBON INESPECTATA, Berlespch Ornith. Centralbl, 1879, p. 63.

*Panychlora inexpectata*, Berl. Ornith. Centralbl, 1879, p. 63.

*Unexpected Emerald.*

*Le Chlorostilbon inattendu.*

*Habitat.*—Bogota, Columbia.

*P. haeberlini* Cab. and Hein., subsimilis, mandibulae basi (eodem modo), carnea, differt rectricibus omnibus obscure (sed splendide) viridibus (nec chalybeis), canda minus quam in *P. haeberlini* furcata, rostro longiore, fronte prasino-viridi.

Long lat, 74.5, cauda, 27, ala, 47.5, rostro, 17.75.

170. CHLOROSTILBON SPECIOSUS, Boucard, Hum. Bird, 1892, p. 79.

*Precious Emerald.*

*Le Chlorastilbon précieux.*

*Habitat.*—Columbia.

*Male.*—Upperside dark olive-green. Tail steel-blue. Wings purplish-brown. Underside, including tail-coverts, shining olive-green. Maxilla black. Mandible flesh colour with black tip.

Total length,  $3\frac{1}{8}$  in. Wing, 2. Tail,  $1\frac{1}{8}$ . Culmen,  $\frac{9}{16}$ .

*Female.*—Unknown, but probably like the preceding species.

TYPE: Unique in my collection.

171. CHLOROSTILBON ANGUSTIPENNIS, Fraz., P.Z.S., 1840, p. 18.

*Hylocharis angustipennis*, Gray, Gen. Birds, vol. i., p. 114.  
p. 75.

*Chrysuronia phæopyga*, Bon. Consp. Gen. Av., 1850, vol. i.,  
*Prasites phæopyga*, Cab. and Hein., Mus. Hein., 1860, t.  
iii., p. 47.

*Chrysomirus angustipennis*, Muls., Hist. Nat. Ois. Mou.,  
1875, t. ii., p. 102.

*Columbian Emerald*, Gould, Mon. Troch., vol. v., p. 353.

*Le Chrysomire angustipenne*, Muls., Hist. Nat. Ois. Mou.,  
1875, t. 11, p. 103.

*Habitat*.—Columbia.

*Male*.—Upperside golden-green. Throat metallic emerald green, sometimes golden. Undertail-coverts shining grass-green. Wings purplish-blue. Tail blue-black, deeply forked. Maxilla black. Mandible flesh colour, with black tip.

Total length,  $3\frac{3}{8}$  in. Wing, 2. Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{9}{16}$ .

*Female*.—Upperside bronzy-green, greener on upper tail-coverts. Underside gray washed, with green on flanks. Median rectrices green at base, rest blue-black, lateral green at base, then blue-black tipped gray, external one gray at base, then crossed by a broad steel-blue band, and tipped gray. Maxilla black. Mandible flesh colour at base, the rest black.

Common in Columbia.

172. CHLOROSTILBON MELANORHYNCHUS, Gould, P.Z.S., 1860, p. 308.

*Chlorostilbon comptus*, Berlepsch, Ibis, 1887, p. 296.

*Golden Green Emerald*.

*Emeraude vert-doré*.

*Habitat*.—Ecuador and Columbia.

*Male*.—Crown metallic-golden. Upperside shining bronze-green. Throat and upper part of breast metallic emerald-green. Rest of underside golden-green. A tuft of white feathers on each side of lower part of vent. Tail steel-blue, deeply forked. Rectrices narrow. Wings purplish-brown. Bill black.



Total length,  $3\frac{2}{8}$ in. Wing,  $1\frac{7}{8}$ . Tail,  $1\frac{2}{8}$ . Culmen,  $\frac{5}{8}$ .

*Female*.—Upperside bronze-green, duller on head. Undertail-coverts shining green. Underside whitish-gray, speckled with bronze-green on sides of breast and flanks. Median rectrices green, with bluish tips, lateral green at base, then steel-blue with white tips. Bill black.

Total length,  $3\frac{2}{8}$ in. Wing,  $1\frac{7}{8}$ . Tail,  $1\frac{1}{8}$ . Culmen,  $\frac{11}{16}$ .

I have not been able to see any difference between the specimens which I have from Columbia, collected at Antioquia, Columbia, by Mr. Salmon, and those collected by Buckley at Ecuador. Therefore I think that *Chlorostilbon melanorhynchus*, *comptus*, Berlepsch is not a valid species.

173. CHLOROSTILBON ASSIMILIS, Lawr., Ann., N.Y., Lyc. Nat. His., 1860, p. 292.

*Chlorolampis assimilis*, Heine., Journ. fur Ornith., 1863, p. 202.

*Veragua Emerald.*

*Emeraude de Veragua.*

*Habitat*.—Veragua and Colon (Panama).

*Male*.—Upperside shining golden-green. Throat metallic golden-green with greenish reflections, rest of underside metallic golden. Undertail-coverts shining green. Tail purple-blue. Wings purplish-black. Bill black. A tuft of white feathers under vent.

Total length,  $2\frac{7}{8}$ in. Wing,  $1\frac{6}{8}$ . Tail,  $1\frac{2}{8}$ . Culmen,  $\frac{9}{16}$ .

*Female*.—Like the preceding species, but much smaller.

This species is closely allied to the preceding, but much smaller, easily to be distinguished by the golden-reddish colour of the upperside, and the colour of its tail.

The specimens in my collection were collected by Arcé in Veragua, and by me at Colon.

I have another male specimen collected by me, at Panama in December, 1876, which is of the same size, with all the upperside shining green, and all the underside metallic emerald-green. I propose the name of *Chlorostilbon panamensis* for it, if it should prove new.

174. CHLOROSTILBON ATALA, Less, Hist. Nat. Troch., 1831, p. 118.

*Hylocharis atala*, Gray, Gen. Birds, 1844-49, vol. i., p. 115.

*Chlorostilbon atala*, Gould, Mon. Troch., vol. v., p. 356.

*Saucerottia atala*, Bon. Consp., Gen. Av., 1850, vol. i., p. 77.

*Chlorestes atala*, Reich., Troch., Enum., 1855, p. 4.

*Chlorostilbon caribaeus*, Lawr., Ann., N.Y., Lyc., Nat. Hist., vol. x., p. 2.

*Atala's Emerald*, Gould, Mon. Troch., vol. v., p. 356.

*Le Chrysomire atala*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 105.

*Habitat*.—Trinidad, Venezuela, and Columbia.

*Male*.—Crown metallic-golden. Upperside golden-green. Uppertail-coverts shining green. Underside metallic emerald-green, golden on flanks and abdomen. Wings purplish-brown. Tail steel-black. Bill black. White tuft of feathers on each side under the vent.

Total length,  $3\frac{1}{8}$  in. Wing,  $1\frac{13}{16}$ . Tail,  $1\frac{1}{8}$ . Culmen,  $\frac{5}{8}$ .

*Female*.—Upperside golden-green, brownish on head. Underside grayish-white, washed with a few green feathers on flanks. Median rectrices bluish-green, lateral bluish-green at base, then steel-blue with white tips. Bill black.

My Venezuelan specimens were collected by Doctor Carlos Rojas, of Caracas.

## GENUS LV. *Smaragdochrysis*, Gould.

SMARAGDOCHRYISIS, Gould, Int. Troch., 1861, p. 180.

TYPE: *C. iridescens*, Gould.

Bill longer than the head, straight and slender. Wings small, primaries narrow and rigid. Tail of moderate size and deeply forked. Tarsi clothed. Feet small; hind toe and nail nearly as long as the middle one (Gould, loc. cit.)

*Habitat*.—Brazil.

\*175. SMARAGDOCHRYISIS IRIDESCENS, Gould, Mon. Troch., vol. v., p. 159.

*Iridescent Humming-bird*, Gould, Mon. Troch., vol. v., p. 359.

*l'Emeraude irisé*.

*Habitat*.—Novo-Friburgo (Brazil.)

*Male*.—? The whole of the body, including the upper and undertail-coverts, iridescent pale green, and light coppery red, most brilliant on the throat; the deeply-forked tail steely dark brown, each feather tipped with a more bronzy or purplish hue, which is seen only in certain lights; upper mandible and the tip of the lower one black, the remainder of the latter apparent reddish flesh-colour (Gould, loc. cit.)

Total length,  $3\frac{1}{4}$  in. Wing,  $1\frac{9}{16}$ . Tail,  $1\frac{1}{4}$ . Bill,  $\frac{3}{4}$ .

*Female*.—Unknown.

It is a very rare species, and one of my desiderata. It has been discovered by Mr. Reeves, at Novo-Friburgo.

GENUS LVI. **Ptochoptera**, Elliot, Ibis, 1874, p. 261.

TYPE: *T. iolaema*, Pelzen.

Bill moderately long, straight, sharply pointed. Wings extremely short, a little over one-third the entire length of the bird. Tail long, deeply forked. Feathers narrow, outer ones curving slightly inwards. Tail-coverts very long, reaching to the fork of the tail. (Elliot, loc. cit.)

*Habitat*.—Brazil.

\*176. PTOCHOPTERA IOLAEMA, Reich, Aufz. der Col., 1853, p. 8.

*Thalurania iolaema*, Von Pelz., Ornith. Braz., p. 57.

*Natterer's Wood Nymph*, Gould, Mon. Troch. Suppl., p. 48.

*Le Ptochoptère à gorge verte*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 89.

*Habitat*.—Brazil.

*Male*.—Top of head and nape dull dark green, entire upper parts grass-green, only slightly metallic. The tail-coverts are a lighter green than the back, and reach to the fork of the tail. Throat pale metallic grass-green. Rest of underparts pale smoky-brown, with some of the flank feathers tipped with grass-green. Undertail-coverts long, same colour as the abdomen, with a slight metallic greenish lustre on the centre of feathers. Tail long, deeply forked, dark purplish-brown. Feathers very narrow. Wings purplish-brown. Bill and feet black.



Total length,  $4\frac{3}{8}$  in. Wing,  $1\frac{5}{8}$ . Tail, 2. Culmen,  $\frac{3}{4}$ .

Female.—Unknown.

Type unique in the Vienna Zoological Museum.

It has been discovered by Mr. Natterer.

GENUS LVII. **Prasitis**, Cab. and Heine, Mus. Hein., 1860, t. iii., p. 49.

TYPE: *O. prasina*, Lesson.

Bill slightly longer than the head, straight and acutely pointed, all black. Wings narrow and long. Tail short, very slightly forked or even. Rectrices wide. Feet small. Tarsi clothed. Sexes unlike.

*Habitat*.—Veragua, Panama, Columbia, Venezuela, Guiana, Trinidad, Ecuador and Peru.

177. PRASITIS PRASINA, Less, Ois. Mou., pp. 35 - 188, pl. 65.

*Hylocharis prasinus*, Bon. Consp. Gen. Av., 1850, vol. i., p. 74.

*Chlorestes prasina*, Reich., Aufz. der Col., 1853, p. 7.

*Prasitis prasina*, Cab. and Heine., Mus. Hein., 1860, t. iii., p. 49.

*Chlorostilbon prasinus*, Elliot, Ibis., 1875, p. 163.

*Chrysomirus prasinus*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 108.

*Chlorostilbon subfurcatus*, Salv. Berl., Ibis., 1887, p. 297.

*Guiana Emerald*.

*Le Chrysomire Orvert*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 109.

*Habitat*.—Guiana.

*Male*.—Crown metallic golden-green. Rest of upperside bronze-green. Uppertail-coverts green. Throat and upper part of breast metallic emerald-green, with bluish hue. Abdomen and flanks metallic golden-green. Wings purplish-brown. Tail blue-black, nearly even. Bill black.

Total length,  $3\frac{1}{8}$  in. Wing,  $1\frac{6}{8}$ . Tail, 1. Culmen,  $\frac{5}{8}$ .

*Female*.—Upperside shining green, bronzy on head. Under-side gray, washed with a few green feathers on sides of

breast and flanks. Tail steel-black, nearly even, lateral rectrices tipped with gray. Bill black.

Several of my specimens of this species were collected by Mr. H. Whitely, at Roraima, British Guiana.

I have placed *Chlorostilbon subfurcatus*, Berlepsch, as a synonym of *Prasitis prasinus*, because I have not been able to see any difference between the specimens from Cayenne and those of Roraima.

\*178. PRASITIS STUEBELI, Mey., Z., Gen. Ornith., 1884, p. 206.

*Stuebel's Emerald*, Gould, Mon. Troch., Suppl., 1886, p. 99.

*l'Emeraude de Stuebel.*

*Habitat.*—Yungas, Bolivia.

*Male.*—Upper surface bronzy-green, head coppery; below golden-green, the breast bluish. Wings purplish-brown. Tail black, tinged with violet-purple. Bill black.

Total length,  $3\frac{1}{8}$  in. Wing,  $1\frac{9}{16}$ . Tail, 1. Culmen,  $\frac{7}{8}$ .

This species belongs to the genus *Prasitis*, on account of the form of its tail, which is slightly emarginated, the rectrices being rather broad. It resembles more *C. atala* than any other species.

This rare species was discovered in Bolivia, by Doctor Stüebel, and dedicated to him, by Doctor Adolf Meyer, of Dresden.

The type is at the Museum of Dresden.

179. PRASITIS DAPHNE, Bon. Rev. Zool., 1854, p. 255.

*Trochilus phaeopygos*, Tsch. Faun. Per., p. 247.

*Metallura phaeopygos*, Reich., Aufz. der Col., p. 8.

*Chlorostilbon napensis*, Gould, Intr. Troch., 1861, p. 177.

*Chlorostilbon peruanus*, Gould, Intr. Troch., 1861, p. 177.

*Chlorostilbon brevicaudatus*, Gould, Intr. Troch., 1861, p. 178.

*Peruvian Emerald.*

*l'Emeraude du Perou.*

*Habitat.*—Trinidad, Guiana, Peru.

*Male.*—Upperside golden-green. Uppertail-coverts shining green. Throat metallic green, with bluish reflections. Breast, sides of neck, and abdomen metallic golden. A patch of

white on lower part of vent on each side. Rectrices steel-blue, short, of same length. Wings purplish-black. Bill black.

Total length, 3in. Wing,  $1\frac{5}{8}$ . Tail,  $\frac{7}{8}$ . Culmen,  $\frac{5}{8}$ .

*Female*.—Upperside shining green. Throat and centre of abdomen gray. Rest of underside shining green. Ear coverts brownish-green. A spot of gray behind the eyes. Tail steel-blue, outermost rectrice tipped gray.

It is a rare species. My specimens were collected by Mr. Hauxwell at Nauta (Perou). I have some others, which I believe to be from Trinidad.

GENUS LVIII. **Panychlora**, Cab. and Heine, Mus. Hein., 1860, t. iii., p. 49.

TYPE: *T. aliciae* Bourcier.

Bill as long as the head, straight. Feathers of forehead projecting on culmen. Nostrils hidden. Wings long, reaching the end of tail. Tail short, slightly forked. Rectrices narrow. Feet small. Tarsi partly clothed. Underside brilliantly coloured in males. Sexes unlike.

*Habitat*.—Venezuela and Columbia.

180. PANYCHLORA ALICIAE, Boure. and Muls., Rev. Zool., 1848, p. 274.

*Chlorostilbon aliciae*, Bon. Rev. and Mag. Zool., 1854, p. 239.

*Smaragditis aliciae*, Reich., Aufz. der Col., 1853, p. 7.

*Chlorestes alicae*, Reich., Troch., Enum., 1855, p. 4.

*Alice's Emerald*, Gould, Mon. Troch., vol. v., p. 357.

*Le Panychlore d'Alice*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 116.

*Habitat*.—Venezuela and Columbia.

*Male*.—Crown golden. Upperside shining golden-green. Underside metallic dark golden-green. Tail dark green with blackish reflections. Rectrices narrow, nearly even. Wings purplish brown. Bill black.

Total length,  $2\frac{7}{8}$ in. Wing,  $1\frac{1}{2}$ . Tail, 1. Culmen,  $\frac{1}{2}$ .

*Female*.—Upperside bronzy-green. Underside grayish-white. Median rectrices green, lateral green at base, then black, tipped with gray.



My specimens of this uncommon species were collected by my friend, Doctor Carlos Rojas, in Venezuela.

\*181. PANYCHLORA MICANS, Salv., Ann. and Mag., Nat. Hist., 1891, p. 375.

*Brillant Emerald.*

*le Panychlore brillant.*

*Habitat.*—?

*Male.*—Similar to that of *P. aliciae*, and about the same size. The whole plumage is of a rich reddish-golden hue, brighter and redder on the crown. The tail is very dark, and of more bronzy tint than in all the allied species; but the outer rectrices are distinctly green, and not coppery-bronze as in *P. russata*; moreover, the tail is slightly forked.

Possibly a variety of *P. aliciae*.

Unique in the British Museum, "Ex Gould Collection."

182. PANYCHLORA, EUCHLORIS, Reich., Aufz der Col., 1853, pp. 7-23.

*Panychlora poortmani major*, Berlepsch, Journ fur Ornith., 1884, p. 313.

*Panychlora aurata*, Cab. and Heine., Mus. Hein., vol. iii., p. 49.

*Golden Emerald*

*l'Émeraude doré.*

*Habitat.*—Columbia.

*Male.*—Crown metallic yellowish-green. Upperside bronze-green. Underside yellowish luminous green. A tuft of white feathers under vent, on each side. Tail shining bronze-green. Bill black, longer than in the preceding species. Wings purplish-brown.

Total length,  $3\frac{2}{3}$  in. Wing,  $1\frac{7}{8}$ . Tail, 1. Culmen,  $\frac{6}{8}$ .

*Female.*—Exactly like the preceding species, with crown golden.

Common in Columbia.

183. PANYCHLORA POORTMANI, Bourcier, Rev. Zool, 1843, p. 2.

*Hylocharis poortmani*, Gray, Gen. Birds., vol. i., p. 115.

*Chlorestes poortmani*, Reich., Aufz. der Col., 1853, p. 7.

*Smaragditis esmeralda*, Reich., Aufz. der Col., 1853, p. 7.

*Panychlora maculicollis*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 49.

*Poortman's Emerald*. Gould, Mon. Troch., vol. v., p. 358.

*le Panychlore de Poortman*, Muls., Hist. Nat. Ois. Mou., 1875, vol. ii., p. 112.

*Habitat*.—Columbia.

*Male*.—Upperside shining green, metallic on crown. Underside metallic grass-green. A tuft of white feathers under vent, on each side. Tail slightly forked, bronzy-green. Wings purplish-brown. Bill black.

Total length,  $3\frac{1}{8}$  in. Wing,  $1\frac{6}{8}$ . Tail, 1. Culmen,  $\frac{5}{8}$ .

*Female*.—Upperside dull golden-green, with brownish orange tint on crown. Underside gray. Median rectrices green, lateral green at base, then black tipped grayish-white. Very common in Columbia. Dedicated to Mr. Théodore Poortman, by Bourcier.

\*184. PANYCHLORA RUSSATA, Salv. and Godm., Ibis, 1881, p. 597.

*Coppery Emerald*, Gould, Mon. Troch., Suppl., 1886, p. 101.

*le Panychlore à queue cuivrée*.

*Habitat*.—Columbia.

*Male*.—Very closely allied to *P. poortmani*, from which it differs only by the russet coppery hue of the tail, and wing-coverts. The tail feathers are wide, and rounded at their ends, rather longer than in other species of this genus.

It was discovered in the Sierra Nevada of Santa Marta, by Mr. F. Simons. The type "Ex. Salv. and Godm. Coll." is in the British Museum.

185. PANYCHLORA STENURA, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 50.

*Chlorostilbon acusticandus*, Gould, 1860, P.Z.S., p. 308.

*Panychlora aliciae*, Wyatt, Ibis, 1871, p. 379.

*Venezuelan Emerald*, Gould, Mon. Troch., Suppl., 1886, p. 100.

*Le Panychlore à queue étroite*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 118.

*Habitat*—Merida, Venezuela.

*Male*.—Crown metallic green. Upperside shining golden-green. Underside metallic emerald-green. Undertail-coverts shining green. Tail bronze-green with blackish reflections. Median rectrices long with round tips, lateral very narrow, pointed, slightly longer, outermost ones excessively narrow and longer still. Wings purplish-brown. Bill black.

Total length,  $3\frac{2}{8}$  in. Wing,  $1\frac{6}{8}$ . Tail,  $1\frac{1}{8}$ . Culmen,  $\frac{5}{8}$ .

*Female*.—Upperside golden-green. Uppertail-coverts shining green. Underside gray. Ear-coverts brownish-black. A white line behind the eyes. Wings dark brown. Median rectrices green, lateral green, then bluish-black with gray tips, outermost ones gray at base, then steel-blue with a large gray spot at tip. Bill black.

Total length,  $3\frac{2}{8}$  in. Wing,  $1\frac{6}{8}$ . Tail,  $1\frac{1}{8}$ . Culmen,  $\frac{5}{8}$ .

It is a rare species. All my specimens were collected at Merida, Venezuela.

## FAMILY VIII. AMAZILIIDAE,

OR FAMILY OF LARGE EMERALDS AND SAPPHIRES.

Bill usually flesh colour with black tips; in some genera the maxilla and tip of mandible are black, in others it is all black, about the same length as the head, straight, rather wide at base, terminating to a sharp point. Body small or of medium size. Wings long and narrow. Rectrices of tail narrow, of medium length, and more or less rounded, forked in some genera, in others the outermost rectrices are slightly shorter than the others, as in the genera *Léucippus*, *Leucochloris*, *Aithurus*, *Eupherusa*, etc. Sexes unlike. All the undersides of males are more or less brilliantly coloured emerald green or sapphirine blue. Tarsi more or less clothed. In the genera *Saucerottia* and *Amazilia* the tarsi are very clothed.

TYPE: *Amazilia* Reich, Av. Syst. Nat., 1849, pl. 39.

*Range*.—Mexico, Central and South America, to Argentine Republic.



This is a large family, containing many distinct genera; all of them closely allied to one another.

GENUS LIX. **Damophila**, Reich, Aufz. der Col., 1853, p. 7.

JULIAMYIA, Bp. Rev. and Mag. Zool., 1854, p. 255.

TYPE: ♀. *Juliae*, Bourcier.

Bill as long as the head, straight and pointed. Tail cuneate, feathers narrow, and slightly pointed, outermost narrower, and much shorter than the others. Wings moderate, feathers very narrow. Tarsi bare. Sexes unlike.

*Habitat*.—Columbia and Ecuador.

186. DAMOPHILA TYPICA, Bon. Rev. and Mag. Zool., 1854, p. 255.

*Ornismyia Juliae*, Rev. Zool., 1842, p. 373.

*Ornismyia feliciana*, Leis, Rev. Zool., 1844, p. 433.

*Hylocharis Juliae*, Gray, Gen. Bird, vol. 1., p. 114.

*Damophila Julia*, Reich, Aufz. der Col. 1853, p. 7.

*Juliamyia typica*, Gould, Mon. Troch., vol. v, p. 337.

*Felicia's Humming Bird*, Gould, Mon. Troch., Suppl., 1886, p. 95.

*Le Damophile de Julie*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii, p. 57.

*Habitat*.—Columbia, Ecuador.

*Male*.—Forehead and throat, glittering metallic grass-green, sometimes with golden reflections. Rest of upperside dark shining green, passing into bronze on the lower part of back. Tail steel-black. Breast, abdomen, and flanks shining Prussian blue. Undertail-coverts blue-black. Wings purplish-brown. Maxilla black. Mandible flesh colour, with black tip.

Total length, 3in. Wing,  $1\frac{3}{4}$ . Tail  $1\frac{1}{2}$ . Culmen,  $\frac{9}{16}$ .

*Female*.—Upperside bronze-green. Underside gray washed with green feathers on sides of breast and on flank. Centre of abdomen and tuft under vent, white. Lateral tail feathers tipped white.

This beautiful species was dedicated by Bourcier, to Miss Anne Julie Roncheval, afterwards Mrs. Mulsant.

I have put *D. felicianae* as a synonym of this species, as there is no difference at all between the specimens from Ecuador and Columbia. The colour of the crown of the head exists, exactly the same, in adult male specimens from Columbia, as in those from Ecuador. I have a good series of this species from Ecuador and Columbia.

187. DAMOPHILA PANAMENSIS, Berl. Journ. for Ornith., 1884,  
p. 313.

*Juliamyia typica*, Lawr. Ann. Lyc. N.Y., t. vi, p. 202.

*Damophila juliae*, Sclat and Salv., P.Z.S., 1864, p. 365.

*Panama Humming Bird.*

*le Damophile de Panama.*

*Habitat.*—Panama.

*Male.*—Very similar to that of *D. juliae*, but with the crown shining green like the back; not glittering like the throat.

GENUS LX. **Cyanophaia**, Reich., Aufz. der Col., 1853,  
p. 10.

*Hylocharis*, Bon. Rev. and Mag. Zool., 1854, p. 255.

*Lepidopyga*, Reich., Troch., Enum., 1855, p. 7.

*Emilia*, Muls. and Verr. Troch., 1865, p. 41.

TYPE: *T. coeruleigularis*, Gould.

Bill a little longer than the head, slightly curved. Tail forked, feathers narrow and pointed. Wings long and narrow. Tarsi covered. Sexes unlike.

*Habitat.*—Veragua, Panama, Columbia.

188. CYANOPHAIA CAERULEIGULARIS, Gould, P.Z.S., 1850,  
p. 163.

*Trochilus duchaissingi*, Bourc. Compt. Rend., xxxii, p. 163.,  
1851.

*Cyanochloris caeruleigularis*, Reich., Aufz. der Col., p. 10.

*Lepidopyga caeruleigularis*, Reich., Troch. Enum., 1855,  
p. 7.

*Sapphironia dnchaissaingi*, Bon. Rev. and Mag. Zool., 1854,  
p. 256.

*Thalurania coelina*, Bourc., Rev. and Mag. Zool., 1856,  
p. 552.

*Blue-throated Sapphironia*, Gould, Mon. Troch., vol. v., p. 346.

*Le Lepidopyge à gorge bleue*, Muls., Hist. Nat, Ois. Mou., 1875, t. xi, p. 69.

*Habitat*.—Veragua and Panama.

*Male*.—Upperside shining bronze-green, reddish on upper tail-coverts. Median rectrices bronze-green, lateral bluish-black. Throat and chest metallic violet-blue. Flanks and abdomen shining grass-green. A tuft of white feathers on each side of anal region. Undertail-coverts shining green, margined with gray. Wings purplish-brown. Maxilla black. Mandible flesh colour with black tips.

Total length,  $3\frac{6}{8}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{5}{8}$ . Culmen,  $\frac{6}{8}$ .

*Female*.—Upperside golden-green, darker on forehead. Central rectrices bronze-green, lateral bluish-black, tipped white. Underside white, washed with shining green feathers on sides and middle of breast, and on flanks. Undertail-coverts white. Same size as male.

I collected several specimens of this fine and rare species at Colon (Panama).

189. CYANOPHAIA GOUDOTI, Bourc., Rev. Zool., 1843, p. 100.

*Polytmus goudoti*, Gray, Gen. Birds, Vol. 1, p. 77.

*Saucerottia goudoti*, Bon. Consp., Gen. Av., 1850, vol. i., p. 79.

*Chalybura goudoti*, Reich., Aufz. der Col., 1853, p. 10.

*Hylocharis goudoti*, Bon. Rev. and Mag. Zool., 1854, p. 255.

*Agyrtria goudoti*, Reich., Troch. Enum., 1855, p. 7.

*Sapphironia goudoti*, Gould, Mon. Troch., vol. v., p. 345.

*Lepidopyga goudoti*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 40.

*Emilia goudoti*, Muls., Hist. Nat., Ois. Mou., 1875, t. ii., p. 64.

*Sapphironia luminosa*, Lawr. Ann., N.Y., Lyc. Nat. Hist., 1862, vol. vii., p. 458.

*Green-breasted Sapphironia*, Gould, Mon. Troch., vol. v., p. 345.

*L'Emilie de Goudot*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 65.



*Habitat*.—Columbia.

*Male*.—Upperside shining grass-green. Underside glittering bluish-green in some specimens; in others, glittering yellowish-green. Median rectrices bronzy-green, lateral purplish-black. Undertail-coverts shining green, narrowly edged with grayish-white. A tuft of white feathers on sides of anal region. Wings purplish-brown. Maxilla black. Mandible flesh colour with black tip.

Total length,  $3\frac{1}{2}$  in. Wing, 2. Tail,  $1\frac{3}{8}$ . Culmen,  $\frac{11}{16}$ .

*Female*.—Upperside bronze-green. Underside grayish-white washed with green feathers on sides of breast, abdomen and flanks. Median rectrices bronzy-green, lateral purplish-black, tipped gray.

Very abundant in Columbia, where it was discovered by the naturalist Goudot, who explored Columbia during many years. He died in that country. It is probable that many of the Columbian species of Humming Birds were sent first to Europe, by him, and by Boissoneau.

I have put *C. luminosa*, Lawr as a synonym of *C. goudoti*; because I have many specimens which correspond exactly to his description of that species, and I consider them all, as *C. goudoti*.

GENUS LXI. **Arinia**, Muls., Ann., Soc., Linn., 1877.

TYPE: *A. boucardi*, Mulsant.

Bill subcylindrical, until near the point, when it is slightly swollen, shorter than half the body. Tail slightly forked. Rectrices narrow and pointed. Wings narrow, reaching for three fourths, the length of median rectrices. The external rectrices are slightly shorter than the next ones. Sexes unlike.

*Habitat*.—Costa Rica.

190. ARINIA BOUCARDI, Muls., Ann. Soc., Linn., Lyon., 1877.

*Sapphironia boucardi*, Boucard, P.Z.S., 1878, p. 70.

*Boucard's Emerald*, Gould, Mon. Troch., Suppl., 1886, p. 81.

*L'Arène de Boucard*, Muls., His. Nat. Ois. Mou., 1878, t. iv., p. 194.

*Habitat*.—Costa Rica.

*Male*.—Upperside shining bronzy-green. Median rectrices shining bronze-green, next bronze-green with black tip, remaining lateral feathers bronze-green at base, rest purplish black, with a very slight gray margin at tips. Throat and breast shining green. Abdomen and undertail-coverts white. Flanks white, washed with green feathers. Wings purple-brown. Maxilla black. Mandible flesh colour, with black tip.

Total length, 4in. Wing, 2. Tail,  $1\frac{9}{16}$ . Culmen,  $\frac{6}{8}$ .

*Female*.—Differs only from the male by the underside, which is grayish-white, washed with green feathers on sides of neck, breast and flanks, and the lateral feathers of tail, which are slightly tipped gray. Size same as male.

Types in my collection.

I discovered this new genus, and new species in May 1877, at Punta Arenas (Costa Rica), during the two days that I had to wait for the steamer, in which I was pursuing my voyage to Guatemala. They were searching for food in some flowers of a species of *Magnolia*, and I consider that I was very fortunate, because, although I collected some great rarities in birds during my stay in Costa Rica, this was the only new species of Humming Bird which I found, with the exception of *Oreopyra pectoralis*, Salv., which at that time we thought to be the same as *O. calolaema*, but in fact, I was the discoverer of that species also.

GENUS LXII. **Chrysuronia**, Bon. Consp. Gen. Av., 1850, vol. i., p. 75.

*Chrysurus*, Bon. Compt. Rendus. 1850. p. 382.

*Chrysurisca*, Cab. and Hein., Mus. Hein., 1860, t. iii. p. 42.

TYPE: *O. Aenone*, Lesson.

Bill slightly longer than the head, broad at base, and rather flat, graduating rapidly to a sharp point. Nostrils exposed. Wings long, reaching the end of tail. Tail forked in some species, in others slightly rounded. Rectrices narrow. Feet large. Tarsi clothed. Sexes unlike.

*Habitat*.—Central America to Argentine Republic.

191. **CHRYSURONIA AENONE**, Less, Ois. Mou, Suppl., p. 157.

*Polytmus aenone*, Gray, Gen. Birds, vol. i., p. 109.

*Chrysurisca aenone*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 42.

*Oenone Humming Bird*, Gould, Mon. Troch., vol. v., p. 325.

*La Chrysuronie Oenone*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 7.

*Habitat*.—Trinidad, Venezuela, Guiana.

*Male*.—Head and throat deep shining blue. Upperside shining grass-green, golden on rump. Upper tail-coverts fiery golden-bronze. Underside metallic yellowish-green. Undertail-coverts bronze edged with gray. Tail metallic golden-bronze. Wings purplish-brown. Maxilla black. Mandible flesh colour with black tip.

Total length,  $3\frac{6}{8}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{6}{8}$ .

*Female*.—Upperside shining green. Uppertail-coverts bronze. Median rectrices bronze, lateral bronze at base, then black, tipped with grayish-white. Underside white, tinged with green feathers on sides of breast and flanks. Undertail-coverts greenish-gray. Slightly smaller than male.

192. CHRYSURONIA LONGIROSTRIS, Berlepsch, Krit. Neb., 1888, p. 20.

*Habitat*.—Columbia, Ecuador.

The only difference between this species and the preceding one is the length of the bill, which is one eighth of an inch longer. I hardly think it is sufficient to consider it as a species.

I possess two specimens collected by Buckley in Ecuador, one has the tail greenish-bronze instead of reddish-bronze, the other has all the underside, excepting the throat, metallic gold.

\*193. CHRYSURONIA HUMBOLDTI, Bourc. and Muls., Ann. Soc. Phys. Lyon, 1852, p. 142.

*Chrysurisca humboldti*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 42.

*Thaumatias viridicaudus*, Lawr. Ann. Lyc., Nat. Hist. N.Y., 1866, p. 403.

*Humboldt's Humming Bird*, Gould, Mon. Troch., vol. v., p. 327.

*La Chrysuronie de Humboldt*, Muls., Hist. Nat. Ois. Mou., 1878, t. iv., p. 187.

*Habitat*.—Ecuador.



*Male*.—Top of head and throat dark purple-blue. Upper surface golden-green, bronzy on the rump. Wings purplish-brown. Undersurface shining light bronzy-green with a white streak in the centre of the abdomen. Tail dark bronzy-green with a bluish shade on the central feathers. Undertail-coverts white. Bill flesh colour or red, (?) tip black. Feet brown.

Total length, 4in. Wing,  $2\frac{5}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{3}{4}$ .

*Female*.—Upperparts coppery-bronze. Undersurface dull white spangled with green. Central tail feathers dark green, lateral ones bronzy-green, graduating into dark brown, and tipped with white.

Total length, 4in. Wing,  $2\frac{3}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{3}{4}$ . (Elliot loc. cit.)

Typical specimens in Elliot and British Museum Collections.

194. *CHRYSURONIA NEERA*, Less and Del., Rev. Zool., 1839, p. 18.

*Ornismya josephinae*, Bourc. and Muls., Rev. Zool., 1848, p. 72.

*Trochilus josephinae*, Gray, Gen. Birds, Suppl., vol. iii., 30a.

*Chrysurisca josephinae*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 10.

*Agyrtria caeruleiceps*, Gould, P.Z.S., 1860, p. 307.

*Josephine's Humming Bird*, Gould, Mon. Troch., vol. v., p. 326.

*La Chrysuronie de Joséphine*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 11.

*Habitat*.—Upper Amazons, Ecuador and Peru.

*Male*.—Crown of the head and chin deep shining blue. Upperside shining green. Tail and uppertail-coverts golden-bronze. Underside metallic grass-green. Undertail-coverts golden-bronze fringed with gray. Wings purplish-brown. Maxilla black. Mandible flesh colour, tip black.

Total length, 4in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{7}{8}$ .

*Female*.—Upperside bronzy-green. Underside white, washed with green on sides of neck, breast and flanks. Rest of plumage like the male, but not so brilliant.

In my opinion the type of *Agyrtria caeruleiceps*, Gould, which I have examined, is only *C. neera*, male junior.

195. CHRYSURONIA BUCKLEYI, Boucard, Hum. Bird, 1893, vol. iii., p. 9.

*Buckley's Humming Bird.*

*La Chrysuronie de Buckley.*

*Habitat.*—Bolivia.

*Male.*—Head dark shining blue. Upperside golden-green. Tail and uppertail-coverts shining coppery-red. Underside metallic emerald-green, golden on abdomen and flanks. Undertail-coverts golden fringed with gray. Wings purplish-brown, Maxilla black. Mandible flesh colour with black tip.

Total length,  $3\frac{5}{8}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{6}{8}$ .

*Female.*—Unknown.

This species is easily distinguished from the preceding one in not having any blue on the chin, the colour of its tail, its smaller size, and bill shorter.

It was discovered in Bolivia, by the late Buckley, in 1876.

Type in Boucard's Museum.

196. CHRYSURONIA ELICIAE, Bourc. and Muls., Ann. Soc. Agr. Lyon., 1846, t. ix., p. 314.

*Polytmus eliciae*, Gray, Gen. Birds, vol. i., p. 109.

*Chrysurisca eliciae*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 42.

*Elicia's Golden Tail*, Gould, Mon. Troch., vol. v., p. 328.

*La Chrysuronie d'Elicia*, Muls., Hist. Nat., Ois. Mou., 1875, t. ii., p. 13.

*Habitat.*—Guatemala, Nicaragua, Veragua.

*Male.*—Upperside golden-green. Uppertail-coverts coppery-red. Tail golden-bronze with coppery tinge at tips. Throat shining blue with purplish reflections. Breast bluish-green. Abdomen and flanks dull golden-green, with buff on centre of abdomen. Undertail-coverts pale buff with bronze reflections. Tuft of white feathers on each side of anal region. Wings purplish-brown. Bill flesh colour with black tips.

Total length,  $3\frac{3}{8}$  in. Wing, 2. Tail,  $1\frac{2}{8}$ . Culmen,  $\frac{5}{8}$ .

*Female.*—Upperside like that of male. Underside grayish-buff tinged with green on breast and flanks. Throat gray,

speckled with shining purplish-blue feathers. Undertail-coverts fawn. Size as that of male.

I think this species was discovered by Delattre in Guatemala. It was dedicated to Madame Elicia Alain, by MM. Bourcier and Mulsant.

197. CHRYSURONIA CHRYSURA, Less. Ois. Mou. Suppl., 1831, p. 107.

*Polytmus chrysurus*, Gray, Gen. Birds, vol. i., p. 100.

*Ramphodon chrysurus*, Reich., Aufz. der Col., p. 15.

*Golden Tail*, Gould, Mon. Troch., vol. v., p. 329.

*La Chrysuronie à queue d'or*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 5.

*Habitat*.—Brazil. (?)

*Male*.—Upperside, including the tail, shining golden-bronze. Throat, breast, upper part of abdomen, and flanks, metallic golden-red. Rest of abdomen reddish-gray. A tuft of white feathers on each side of anal region. Undertail-coverts golden with gray edges. Wings purplish-brown. Bill flesh colour, with black tips.

Total length,  $3\frac{1}{2}$  in. Wing,  $2\frac{1}{4}$ . Tail,  $1\frac{3}{8}$ . Culmen,  $\frac{6}{8}$ .

*Female*.—Upperside golden-bronze. Underside, like that of male, but less brilliant. Same size as male.

It is a very rare species.

198. CHRYSURONIA RUFICOLLIS, Veill., N. Dict. Hist. Nat., vol. vii., p. 362.

*Ornisymia ruficollis*, d'Orb. and Laf., Syn. Av., 1838, p. 30.

*Rufous-Throated Golden-Tail*.

*la Chrysuronie à gorge rousse*.

*Habitat*.—Bolivia, Paraguay.

*Male*.—Upperside golden-green. Tail bronze. Throat-rufous. Breast, sides of abdomen and flanks shining golden-green. Centre of abdomen grayish-buff. Undertail-coverts golden-rufous with gray edges. Wings purple-brown. Bill flesh colour with black tips.

Total length,  $3\frac{6}{8}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{7}{8}$ .

*Female*.—Upperside golden-green. Tail bronze, with gray tips on lateral feathers. Rest as male.



*Young Male*.—Chin buff. Abdomen, flanks and undertail-coverts buff-gray, tinged on flanks with golden-green feathers. Maxilla black. Mandible flesh colour at base, rest black.

A very rare species.

GENUS LXIII. **Polyerata**, Heine, *Journ. fur Orn.*, 1863, p. 194.

*Coeligena and Damophila*, Reich., *Aufz. der Col.*, p. 7.

TYPE: *P. amabilis*, Gould.

Bill longer than the head, straight, terminating in a sharp point. Nostrils exposed. Tail very slightly forked. Wings long, reaching nearly the end of tail. Feet small. Tarsi clothed. Sexes unlike.

*Habitat*.—Costa-Rica, Veragua, Columbia.

199. POLYERATA AMABILIS, Gould, *P.Z.S.*, 1851, p. 115.

*Fuliamya amabilis*, Bon., *Rev. and Mag. Zool.*, 1854, p. 53.

*Polyerata amabilis*, Heine, *Journ. fur Ornith*, 1863, p. 194.

*Polyerata decora*, Salv., *Ann. Mag. Nat. Hist.*, 1891, p. 394.

*Blue breasted Polyerata*.

*La Polyerate aimable*, Muls., *Hist. Nat. Ois. Mou.*, 1875, t. ii., p. 53.

*Habitat*.—Costa Rica, Columbia.

*Male*.—Forehead shining metallic green. Upperside bronze-green. Uppertail-coverts and median rectrices reddish-bronze in some specimens, in others greenish-bronze, lateral rectrices bronze at base, then bluish-black, outermost ones nearly black for all their length. Chin shining greenish-bronze, with black reflections in centre. Throat and upperpart of breast metallic violet-blue in some specimens, in others metallic blue with scarcely any purple reflections. Lower part of breast and flanks greenish-bronze. Abdomen and undertail-coverts gray. A tuft of white feathers on each side of vent. Wings purplish-brown. Maxilla black. Mandible flesh-colour, tip black.

Total length,  $3\frac{5}{8}$  in. Wing, 2. Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{6}{8}$ .

*Female*.—Upperside bronze-green, reddish on uppertail-coverts. Median rectrices bronzy-green, with black tips, lateral, bronze at base, then black with grayish tips. Chin

gray, spotted with bronze feathers. A few shining blue spots on breast. Rest of underside plumage, like the male. Dimension slightly smaller than the male.

It is a rare species. I have several specimens from Columbia, and Chiriqui (Veragua). Others I killed at San Carlos (Costa Rica), thinking at the time that I had discovered a new species. Lately Mr. Salvin have described specimens from Chiriqui under the name of *Polyerata decora*; but I am of opinion that they are all one and same species, having some specimens from Columbia, coloured exactly as those from Costa Rica and Chiriqui. In my specimens, the central rectrices have a reddish shade as in the others, the only difference that I can see is that the throat of my specimens from Costa Rica and Chiriqui is more bluish than in those from Columbia and Ecuador.

GENUS LXIV. **Hylocharis**, Boié, Isis, 1831, p. 546.

*Sapphironia*, Bon., Rev. et Mag. Zool, 1854. p. 256.

TYPE: *T. sapphirinus*, Gmelin.

Bill longer than the head, straight, broad, and flat at base. Wings long, pointed, nearly reaching the end of tail. Rectrices narrow, of even size. Tarsi clothed. Males brilliantly coloured on breast, and sometimes on forehead also. Females plain.

*Habitat*.—Guiana, Brazil, Peru.

200. HYLOCHARIS SAPPHIRINA, Gmel. Syst. Nat., 1788, t. i., p. 496.

*Trochilus fulvivfrous*, Lath. Ind. Ornith. Suppl., 1790, vol. ii., p. 172.

*Ornismya sapphirina*, Less. Ois. Mou., 1829, p. 172.

*Sapphironia sapphirina*, Bon. Rev. and Mag. Zool., 1854. p. 256.

*Red-throated Sapphire*, Gould, Mon. Troch., vol. v., p. 342.

*L'Hylocare à poitrine de saphir*, Muls., Hist. Nat. Ois. Mou., 1875, vol. ii., p. 17.

*Habitat*.—Brazil.

*Male*.—Upperside dark shining green. Uppertail-coverts reddish-bronze. Middle rectrices reddish-bronze, lateral chestnut, edged with blackish purple. Chin rufous. Throat and

breast dark sapphirine-blue. Bill flesh colour with black tips. It differs in size according to specimens. Wings purple. A tuft of white feathers on each side of lower part of vent.

Total length,  $3\frac{6}{8}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{6}{8}$ .

*Female*.—Underside grayish-white. Chin rufous. Breast speckled, with a few bright blue feathers. Rectrices purple-bronze, lateral tipped with white. Rest of plumage like that of male.

201. HYLOCHARIS GUIANENSIS, Boucard, H. Bird, vol. i., p. 52.

*Guiana Sapphire.*

*l'Hylochare de Guyane.*

*Habitat*.—Guiana.

Differing from the preceding species by the darker colour of upperside, and the median rectrices which are coppery-green, instead of reddish-bronze.

Total length,  $3\frac{5}{8}$  in. Wing, 2. Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{6}{8}$ .

This species was discovered by Henry Whitely, in British Guiana. Types in my Collection.

202. HYLOCHARIS BRAZILIENSIS, Boucard, Hum. Bird, 1893, vol. iii., p. 7.

*Brazilian Sapphire.*

*l'Hylochare du Brésil.*

*Habitat*.—Rio, Brazil.

*Male*.—Upperside shining green, golden on back. Median rectrices bronze with purplish reflections, lateral chestnut, edged with purplish-black. Chin rufous. Throat and breast metallic greenish-blue. Flanks and abdomen golden-green. Wings purple. Bill flesh colour with black tips.

Total length,  $3\frac{1}{2}$  in. Wing, 2. Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{6}{8}$ .

I have only one fine adult male specimen of this new species, which differs considerably from the two preceding ones by the colour of throat and breast, and the golden colour of general plumage.

Type in Boucard's Museum.

203. HYLOCHARIS CYANEA, Vieill., Nouv. Dict. Hist. Nat., t. xxiii., p. 426.

*Ornismya bicolor*, Less., Ois. Mou., 1829, p. 161.



*Thaumatias cyaneus*, Bon., Consp. Gen. Av., 1850, vol. i., p. 78.

*White-throated Sapphire*, Gould, Mon. Troch., vol. 5, p. 344.

*l'Hylochare à front bleu*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 20.

*Habitat*.—Brazil.

*Male*.—Head, throat and breast shining dark blue. Upper-side bronzy-green passing into reddish-bronze on rump. Upper-tail-coverts dark reddish-bronze. Underside green with gray tinge. A tuft of white feathers on each side of the anal region. Undertail-coverts bluish-black with grayish or bronzy edges. Tail blue-black. Wings purple. Bill flesh colour with black tips.

Total length,  $3\frac{1}{2}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{6}{8}$ .

*Female*.—Upperside like that of male, dark green on forehead. Underside grayish-white tinged with green on sides of throat and breast. Lateral rectrices tipped grayish-white. Young males have the chin and breast shining pale blue.

204. HYLOCHARIS VIRIDIVENTRIS, Berlepsch, Ibis, 1880, p. 113.

*Green-vented Sapphire*.

*l'Hylochare a ventre vert*.

*Habitat*.—Venezuela, Trinidad, British Guiana and Orinoco.

This is a northern form of *H. cyanea*, from which it differs in its somewhat more splendid and vivid colouration. In particular, I find the belly to be never mixed with gray, as in Brazilian specimens, but of a dark and splendid green colour.

205. HYLOCHARIS BARTLETTI, Gould, P.Z.S., 1866, p. 194.

*Agyrtria Bartletti*, Elliot, Class and Syn. Troch., 1879, p. 205.

*Bartlett's Emerald*, Gould, Mon. Troch. Suppl., 1886, p. 74.

*Le Thumatias de Bartlett*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 255.

*l'Hylocare de Bartlett*.

*Habitat*.—Peru.

*Male*.—Upperside bronzy-green. Throat and breast shining purplish-blue. Abdomen and flanks dark green, washed with gray. Centre of abdomen, sides of flanks, and tuft on each side of lower part of vent pure white. Undertail-coverts pale gray, with green in centre. Median rectrices bronze, with bluish-black tips, lateral bluish-black. Wings purple-brown. Maxilla black. Mandible flesh colour.

Total length,  $4\frac{3}{8}$  in. Wing,  $2\frac{2}{8}$ . Tail,  $1\frac{6}{8}$ . Culmen,  $\frac{7}{8}$ .

This rare species was discovered by Bartlett in Peru, and it was dedicated to him, by John Gould.

My specimens were collected in Peru, by Garlepp in 1887.

It is very closely allied to *H. lactea*, from which it differs only by the lighter bronze colour of its general plumage, and the bill, which is longer.

206. HYLOCHARIS LACTEA, Less., Ind. Gen. Syn. Ois., 1831, p. 38.

*Cyanochlaris lactea*, Reich., Aufz. der Col., 1853, p. 10.

*Sapphironia lactea*, Bon., Rev. and Mag. Zool., 1854, p. 256.

*Blue breasted Sapphire*, Gould, Mon. Troch. vol. v., p. 343.

*l'Hylochare à ventre blanc*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 23.

*Habitat*.—Brazil.

*Male*.—Upperside shining grass-green, bronzy on crown, and uppertail-coverts. Throat and breast metallic sapphirine-blue. Middle of the abdomen white, and tuft on each side of vent, pure white. Flanks shining green. Undertail-coverts white with dark disks. Median rectrices blackish with bronze margin, lateral bluish-black with olive margin. Maxilla black, mandible flesh colour with black tip.

Total length,  $3\frac{6}{8}$  in. Wing,  $2\frac{2}{8}$ . Tail,  $1\frac{2}{8}$ . Culmen,  $\frac{5}{8}$ .

*Female*.—Same colouring as the male, with throat and breast of a paler blue. Lateral rectrices tipped with gray.

It is a rare species, and only represented by one male specimen in the collection of the British Museum. I possess several fine specimens from Brazil.

GENUS LXV. **Agyrtia**, Reich., Troch., Enum., 1855, p. 7.

THAUMANTIAS, Bon., Rev. and Mag., Zool., 1854, p. 255.

THAUMATIAS, Gould, Mon. Troch., Intr., 1861, p. 151.

TYPE: *Agyrtria leucogastra* Reichenback.

Bill longer than the head, straight, broad at base, and acutely pointed. Feathers of the forehead not extending upon the culmen. Nostrils exposed. Wings long and narrow. Median rectrices slightly shorter than the next two, these also shorter than the two outermost ones, no subterminal bar on the lateral rectrices of the large species, which are generally bronze at base, with the remainder black. A subterminal bar on lateral rectrices of the small species. Tarsi clothed. Sexes alike.

*Habitat*.—Guiana, Venezuela, Trinidad and Brazil.

207. AGYRTRIA LEUCOGASTER, Gmel. Syst. Nat., 1788, vol. i., p. 495.

*Ornysmia albirostris*, Less. Ois. Mou., 1829, p. 212

*Thaumantias leucogaster*, Bon., Rev. and Mag., Zool., 1854, p. 255.

*Agyrtria, leucogastra*, Reich, Aufz. der Col., 1853, p. 10.

*White-throated Emerald*, Gould, Mon. Troch., vol. v., p. 294.

*La Leucolie leucogastre*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 232.

*Habitat*.—Brazil.

*Male*.—Head and sides of neck metallic green. Upperside shining grass-green. Median rectrices bronze-green, lateral steel-black with tips slightly margined with gray. Throat, centre of the abdomen, and undertail-coverts pure white. Breast and sides of flanks shining bronze-green. Wings purple-brown. Maxilla black. Mandible flesh colour with black tip.

Total length, 3 $\frac{6}{8}$  in. Wing, 2 $\frac{1}{8}$ . Tail, 1 $\frac{5}{8}$ . Culmen,  $\frac{7}{8}$ .

208. AGYRTRIA, VIRIDICAUDA, Berlepsch, Ibis, 1883, p. 493.

*Leucippus viridicauda*, Berlepsch, Ibis, 1883, p. 493.

*Berlepsch's White-throat*, Gould, Mon. Troch., Suppl., 1886, p. 73.

*La Leucolie de Berlepsch*.

*Habitat*.—Huiro, Peru.



Differs only from *L. leucogaster*, by reason of its uniform tail feathers, these never being margined with white, as well as by its shorter bill.

This species was discovered in Peru, by Mr. H. Whitely.

\*209. AGYRTRIA ALLENI, Elliott, Auk., 1888, p. 263.

*Allen's Emerald.*

*le Thaumantias d'Allen.*

*Habitat.*—Yungas, Bolivia.

Top of head and occiput dark greenish-blue, not metallic; nape, back, and shoulders, shining grass-green; rump and uppertail-coverts glittering bronze. Tail shining bronze, with the tips of feathers pale gray, widest on the outermost rectrices, and diminishing to the central ones, which have a mere indication of gray at the tip. Wings purplish-brown. Sides of neck shining bluish-green. Throat and centre of breast white, speckled with shining green; sides of breast and flanks metallic grass-green. Abdomen whitish. Undertail-coverts pale brown, edged with white. Maxilla black. Mandible flesh colour, tip black. Feet black.

Total length,  $3\frac{1}{2}$  in. Wing,  $1\frac{7}{8}$ . Tail,  $1\frac{7}{16}$ . Bill,  $\frac{3}{4}$ .

"Elliot's loc. cit."

Type unique in the New York American Museum of Natural History.

It was brought from Bolivia, by Doctor H. Rusby.

210. AGYRTRIA COMPSA, Hein., Journ. fur Ornith., 1863, p. 185.

*Agyrtria mellisuga*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 34.

*Thaumantias compsa*, Elliot, Ibis, 1878, p. 45.

*Heine's Emerald*, Gould, Mon. Troch. Suppl., 1886, p. 75.

*Le Thaumantias de Heine.*

*Habitat.*—Guiana, Brazil.

*Male.*—Forehead, sides of neck and breast metallic golden-green. Upperside golden-green. Median rectrices dark bronze, lateral purple-blue. Throat, centre of breast, abdomen, and undertail-coverts white. Flanks golden-green. Wings purple-brown. Maxilla black. Mandible flesh-colour with black tip.

Total length,  $3\frac{1}{2}$  in. Wing, 2. Tail,  $1\frac{2}{8}$ . Culmen,  $\frac{7}{8}$ .

\*211. AGYRTRIA NITIDIFRONS, Gould, P.Z.S., 1860, p. 308.

*Thaumatias nitidifrons*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., page 238.

*Brilliant fronted Emerald*, Gould, Mon. Troch., vol. v., p. 297.

*le Thaumatias à front brillant*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 239.

*Habitat*.—Venezuela (?)

*Adult*.—Crown of the head, face, chest, and neck glittering green; abdomen and flanks golden-green; back, shoulders, and rump bronzy-green; tail pale bronzy green, with a zone of purplish-brown crossing the four lateral feathers on each side, near their tips; undertail-coverts gray with a patch of bronzy-green in the centre of each; tarsi grayish-brown; upper mandible black; under mandible yellow, black at tip.

Total length,  $3\frac{1}{4}$  in. Wing,  $1\frac{7}{8}$ . Culmen,  $\frac{3}{4}$ . "Gould loc cit."

Gould's type, presented to him by Mr. Lawrence of New York, is still unique, and is now in the collection of the British Museum.

212. AGYRTRIA TEPHROCEPHALA, Vieill., Nouv. Dict. Hist. Nat., t. xxiii., p. 430.

*Ornysmia tephrocephala*, Less. Ois. Mou., 1892, p. 182.

*Ornysmia albiventris*, Less. Ois. Mou., 1829, p. 209.

*Polytmus thaumatias*, Gray, Gen. Birds, vol. i., p. 108.

*Thaumatias albiventris*, Bon. Consp. Gen. Av., 1850, vol. i., p. 70.

*Coeligena tephrocephala*, Reich., Aufz. der Colib., 1853, p. 7.

*White bellied Emerald*, Gould, Mon. Troch., vol. v., p. 301.

*Le Thaumatias à ventre blanc*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 245.

*Habitat*.—Brazil.

*Male*.—Upperside dark bronzy-green, deeper in the middle of back. Median rectrices bronze-green, lateral bronze at base, passing into black with gray tips. Throat and breast grass-green. Abdomen and undertail-coverts white. Flanks

white, washed with green. Wings purplish-brown. Maxilla black. Mandible flesh-colour, tip black.

Total length, 4in. Wing,  $2\frac{1}{4}$ . Tail,  $1\frac{5}{8}$ . Culmen,  $\frac{7}{8}$ .

*Female*.—Slightly smaller, and less brilliant than the male.

213. AGYRTRIA TOBACI, Gmel. Syst. Av., 1788, p. 498.

*Trochilus tobagensis*, Lath., Ind. Ornith., 1790, vol. i., p. 316.

*Trochilus maculatus*, Vieill., Ois. Dor., 1802, t. i., p. 87.

*Ornysmia viridissima*, Less., Ois. Mou., 1829, p. 207.

*Saucerottia viridipectus*, Reich., Aufz. der Col., 1853, p. 7.

*Agyrtria maculata*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 33.

*Thaumatias linnaei*, Gould, Mon. Troch., vol. v., p. 302.

*Linnaeus Emerald*, Gould, Mon. Troch., vol. v., 302.

*Le Thaumatias de Linné*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 248.

*Habitat*.—Tobago, Trinidad, Venezuela, Guiana.

*Male*.—Upperside bronzy-green. Median rectrices bronze-green, lateral bronze at base passing into black, with pale bronze tips. Throat and breast metallic emerald-green. Centre of abdomen white. Flanks bronze-green. Undertail coverts pale greenish-bronze, margined white. Wings purplish-brown. Maxilla black. Mandible flesh colour, with black tip.

Total length,  $3\frac{7}{8}$ in. Wing, 2. Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{7}{8}$ .

*Female*.—Same colouring as male, but not so bright. Lateral feathers of tail largely tipped, with pale green-bronze. Slightly smaller than the male.

My specimens from Trinidad and Venezuela, have scarcely any black on the lateral feathers of tail, and the bill is flesh colour, with black tips.

214 AGYRTRIA APICALIS, Gould, Int. Troch., 1861, p. 154.

*Agyrtria terpna*, Heine, Journ., fur Ornith., 1863, p. 184.

*Black-tipped Emerald*, Gould, Mon. Troch., Suppl., 1886, p. 77.

*Habitat*.—Columbia.



*Male*.—This species is very much like the preceding one. The only difference which I can perceive is its larger size, and the centre of breast which is white.

Total length,  $3\frac{6}{8}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{3}{8}$ . Culmen, 1.

\*215. AGYRTRIA MACULICAUDA, Gould, Int. Troch., 1861, p. 154.

*Guiana Emerald*, Gould, Mon. Troch., Suppl., 1886, p. 77.

*Le Thaumantias à queue tachée*, Muls., Hist., Nat. Ois., Mou., 1874, t. i., p. 251.

*Habitat*.—Guiana:

*Male*.—This is a very small species with a long thin bill, its breast is green as in the others. Centre of the abdomen white; undertail-coverts white except in the centre, where they are dark brown; two central tail feathers bronzy-green, except at the extreme tip, which is greenish-black, the next one on each side, bronze for half its length, then black, the three outer ones, on each side, bronzy-green at base, then broadly zoned with black, next to which, they are green, and lastly white.

Total length,  $3\frac{1}{2}$  in. Bill,  $\frac{7}{8}$ . Wing, 2. Tail,  $1\frac{1}{8}$ . "Gould, loc. cit."

216. AGYRTRIA NIGRICAUDA, Elliot, Ibis, 1878, p. 47.

*Black-tailed Emerald*, Gould, Mon. Troch., Suppl., 1886, p. 80.

*Le Thaumantias à queue noire*.

*Habitat*.—Trinidad, Guiana, Brazil.

*Male*.—Upperside bronzy-green, darkest on the head, and shading into purple on the uppertail-coverts. Tail steel-black excepting the median rectrices which are purplish-bronze at base, the two outermost feathers are greenish-gray at tips. Throat and breast shining metallic grass-green. Flanks dark green. Middle of abdomen, vent, and undertail-coverts white. Wings purple. Maxilla black. Mandible flesh colour, with black tip.

Total length,  $3\frac{1}{2}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{5}{8}$ .

I have some specimens of this species from Brazil and Trinidad, in which the median rectrices, and the one next to them are purplish-bronze with blackish tips.

217. AGYRTRIA NITICAUDA, Elliot, Ibis, 1878, p. 48.

Bright-tailed Emerald, Gould, Mon. Troch., Suppl., 1886, p. 80.

*Thaumatias niticanda*, Muls., Hist. Nat. Ois. Mou., 1878, t. iv., p. 177.

*le Thaumatias à quene brillante.*

*Habitat.*—Guiana.

*Male.*—Upperside bronze-green, with a slight coppery tinge on the head. Chin white. Throat, breast, and sides of neck bright metallic green. Flanks and abdomen bronze-green. Middle of abdomen, vent, and undertail-coverts white. Median rectrices bronze-green, lateral purplish-black, edges and tips of outermost bronze green. Wings purplish-brown. Bill flesh colour with dark tips.

Total length,  $3\frac{1}{2}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{1}{2}$ . Bill,  $\frac{3}{4}$ .

Type in the Museum of New York "Ex. Elliot's Coll."

By the description and my specimens, which agrees with it, and were collected by Whitely in Guiana, I should not be surprised if this species, and *A. maculicauda*, Gould, turn out to be only the well known species *A. tobaci*.

218. AGYRTRIA FLUVIATILIS, Gould, Int. Troch, 1861, p. 154.

*Riverine Emerald*, Gould, Mon. Troch., Suppl., 1886, p. 76.

*Le Thaumatias fluviatile*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 254.

*Habitat.*—Pelas (Peru.)

*Male.*—Upperside shining golden-green. Median rectrices bronze-green largely tipped with bluish-black, lateral bronze at base of external web, then bluish-black, the two outermost ones bluish-black, with a very slight gray margin at tips. Throat and breast luminous grass-green. Abdomen and flanks shining greenish-bronze. Vent white. Undertail-coverts pale green, edged with gray. Wings purple. Bill flesh colour with black tips.

Total length,  $3\frac{7}{8}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{3}{8}$ . Culmen,  $\frac{7}{8}$ .

*Female.*—Upperside shining grass-green, bronzy on forehead and uppertail-coverts. Median rectrices, bronze-green, lateral bronze-green on external webs, then bluish-black, margined white at tips, outermost one bluish-black with

margin of tip white, underneath bluish-black with grayish tip. Throat and breast luminous green, lighter than in the male. Flanks and abdomen bronzy-green. Centre of breast abdomen, and vent white. Undertail-coverts greenish-brown edged white. Maxilla brownish-black. Mandible flesh colour with black tip.

Total length,  $3\frac{7}{8}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{2}{8}$ . Culmen,  $\frac{7}{8}$ .

I think the discoverer of this species is Mr. Hauxwell, as my specimens, of both sexes, of this species, were collected by him at Pebas in 1866, and it is very probable that the typical specimen of Gould came also from him.

It is a rare species in the Collections.

\*219. AGYRTRIA (?) LUCIAE, Lawr., Proceed., Acad., Nat., Sci., Philad., 1867, p. 233.

*Lucy's Emerald*, Gould, Mon. Troch., Suppl., 1886, p. 78.

*Le Thaumantias de Lucie*, Musl., Hist. Nat. Ois. Mou., 1874, t. i., p. 241.

*Habitat*.—Honduras.

Upper plumage dull bronzy dark green, crown duller; uppertail-coverts a lighter bronzy-green somewhat golden; tail feathers dull bronzy-green, all except the two central ones broadly marked near their ends with dark purplish-bronze, the tips being ashy-gray; the throat and breast are glittering bluish-green; middle of the abdomen white; wings brownish-purple. Upper mandible black, the under one yellow with the end blackish; feet black.

Length,  $3\frac{3}{4}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{3}{8}$ . Bill,  $\frac{13}{16}$ . "Lawr., loc. cit."

This species was dedicated to Miss Lucie Brewster, daughter of Mr. Thomas Brewster, of Boston.

\*220. AGYRTRIA NORRISII, Bourc., P.Z.S., 1847, p. 47.

*Polytmus norrisii*, Gray, Gen. Birds, vol. i., p. 108.

*Amazilia norrisii*, Reich., Aufz. der Col., 1853, p. 10.

*Pyrrophaena norrisii*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 36.

*Hemistilbon norrisii*, Gould, Int. Troch., 1861, p. 150.

*Leucodora norrisii*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 309.



*Thaumatias norrisii*, Elliott, Ibis., 1878, p. 44.

*Thaumatias lerdi*, De Oca, la Naturaleza, 1874, t. iii, p. 24.

Norris's Emerald.

*Le Leucodore de Norris*, Muls., Hist. Nat. Ois. Mou., 1874, t. i, p. 310.

*Habitat*.—Mexico.

*Male*.—Upper parts golden-green. Throat and sides of neck metallic golden-green. Breast white. Abdomen and flanks pale rufous. Uppertail-coverts light grayish-green. Undertail-coverts grayish-white. Wings pale green. Tail shining grayish-green. Feet flesh colour. Bill flesh colour, black at the point.

Wing, 55 mill. Tail, 35. Bill, 18.

“Bourcier, P.Z.S., 1847, p. 47.”

221. AGYRTRIA BREVIROSTRIS, Less., Ois. Mou., 1829, p.p. 35-211.

*Basilinna brevirostris*, Less., Ind. Gen., and Syn., Gen. Troch., 1831, p. 26.

*Polytmus brevirostris*, Gray, Gen. Birds, vol. i., p. 108.

*Thaumatias brevirostris*, Bon., Consp. Gen. Av., 1850, vol. i., p. 78.

*Agyrtria brevirostris*, Reich., Aufz. der Col., 1853, p. 10.

*Short-billed Emerald*, Gould, Mon. Troch., vol. v., p. 298.

*Le Thaumatias brévirostre*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 242.

*Habitat*.—Brazil.

*Male*.—Upperside shining bronzy-green. Median rectrices shining olive-green, lateral olive-green, with a subterminal black bar near the tips, which are grayish-bronze. Sides of neck and breast metallic-green. Throat, centre of breast, and abdomen white. Flanks bronze-green. Undertail-coverts gray, margined with white. Wing purple-brown. Maxilla black. Mandible flesh colour, with black tip.

Total length,  $2\frac{2}{8}$  in. Wing, 2. Tail,  $1\frac{2}{8}$ . Culmen,  $\frac{5}{8}$ .

*Female*.—Like the male, less brightly coloured on sides of neck and breast. Lateral rectrices slightly tipped with gray.

Abundant in Brazil.

222. AGYRTRIA VERSICOLOR, Nordm., Erm., Reise, 1835, pl. 1.

*Hylocharis versicolor*, Gray, Gen. Birds, vol. 1, p. 108.

*Agyrtria versicolor*, Reich., Aufz. der Col., 1853, p. 10.

*Thaumatias versicolor*, Bon., Rev. and Mag. Zool., 1854, p. 255.

*Thaumatias affinis*, Gould, Mon. Troch., vol. v., p. 299.

*Agyrtria affinis*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 33.

*Allied Emerald*, Gould, Mon. Troch., vol. 5, p. 299.

*Le Thaumatias tout vert.*

*Habitat.*—Brazil.

*Male*—Upperside bronzy-green. Median rectrices bronze, lateral pale olive-bronze with the subterminal bar pale brown. Throat, sides of neck, and breast glittering metallic green, showing the white base of feathers. Flanks and abdomen shining bronzy-green. Undertail-coverts olive-bronze, margined with white. Wings purplish-black. Maxilla black. Mandible flesh colour, with black tip.

Total length,  $3\frac{1}{2}$  in. Wing, 2. Tail,  $1\frac{2}{8}$ . Culmen,  $\frac{11}{16}$ .

*Female*.—Coloured like the male, but less bright on sides of neck, with the centre of throat, breast and abdomen, white. Lateral rectrices margined with gray.

223. AGYRTRIA CANDIDA, Bourc. and Muls., Ann. Soc. Agri., Lyon, 1846. t. ix., p. 326.

*Ornysmya senex*, Less., Rev. Zool., 1838, p. 315.

*Polytmus candidus*, Gray, Gen. Birds, vol. 1, p. 108.

*Thaumatias candidus*, Bon., Consp. Gen. Av., 1850, vol. i., p. 78.

*Agyrtria margaritaceus*, Reich., Troch. Enum., 1855, p. 7.

*Leucolia candida*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 233.

*White breasted Emerald*, Gould, Mon. Troch., vol. v. p. 292.

*le Candide,*

*Habitat.*—Mexico to Nicaragua.

*Male*.—Upperside bronze, greenish on back. Tail bronze, with a reddish tinge at tips, lateral with a brownish-black

subterminal bar and pale bronze tips. Throat, breast, abdomen and undertail-coverts white. Sides of breast and flanks pale bronzy-green. Maxilla black. Mandible flesh colour with black tip. Wings purplish.

Total length,  $3\frac{1}{8}$  in. Wing, 2. Tail,  $1\frac{2}{8}$ . Culmen,  $\frac{6}{8}$ .

*Female*.—Exactly like the male excepting the tail beneath, which is grayish-bronze with a subterminal blackish bar on lateral feathers and very pale bronzy-gray tips.

I have collected this species in Mexico, where it was abundant. I think the typical specimen was collected by Delattre.

GENUS LXVI. **Uranomitra**, Reich., Aufz. der Col., 1853, p. 10.

*Cyanomyia*, Bon., Rev. and Mag., Zool., 1854, p. 254.

*Leucolia*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 211.

TYPE: *T. franciae*, Bourcier.

Bill longer than the head, straight or slightly curved; broad and flat at base. Nostrils exposed. Wings long. Tail slightly forked, median rectrices slightly shorter than the next, which are also slightly shorter than the other two; these are of the same length. All the lateral rectrices have a subterminal bar more or less apparent. Tarsi partly clothed. Forehead brilliantly coloured in both sexes, which are coloured alike.

*Habitat*.—Mexico, Central America, Columbia, Ecuador, Peru.

224. URANOMITRA FRANCIAE, Bourc. and Muls., Ann. Soc. Agr., Lyon, 1846, t. ix., p. 324.

*Polytmus franciae*, Gray, Gen. Birds, vol. i., p. 109.

*Agyrtria franciae*, Reich., Troch. Enum., 1855, p. 7.

*Cyanomyia franciae*, Bon., Rev. and Mag., Zool., 1854, p. 254.

*Leucolia franciae*, Muls., His. Nat. Ois. Mou., 1874, t. i., p. 217.

*Franciás Azure Crown*, Gould, Mon. Troch., vol. v., p. 287.

*La Leucolie de Francia*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 218.

*Habitat*.—Columbia.



*Male*.—Head metallic blue. Neck brilliant green. Rest of upper parts bronzy-green, changing to coppery-red on rump and upper-tail coverts. Median rectrices bronze, lateral of same colour, with a blackish spot appearing as a subterminal bar near the tips. These spots on the lateral feathers, and the length of rectrices, are the principal differences which distinguish this genus from *Cyanomyia*. Underside pure white, excepting sides of neck and breast, which are metallic green. Sides of flanks washed with green. Wings purple-brown. Maxilla black. Mandible flesh colour, with black tip.

Total length, 4in. Wing,  $2\frac{2}{8}$ . Tail,  $1\frac{3}{8}$ . Culmen,  $\frac{7}{8}$ .

*Female*.—Head bluish. Upperside bronze-green, golden on lower part of back, and coppery-red on uppertail-coverts. Tail bronze, with the subterminal blackish bar more apparent than in the male, and the tips of lateral rectrices slightly margined with gray. Underside pure white, sides of neck metallic-green, flanks golden. Wings purple-brown. Bill black except base of mandible which is flesh colour. Same size as male.

It is a common species.

225. URANOMITRA CYANICOLLIS, Gould, P.Z.S., 1853, p. 61.

*Cyanomyia cyanicollis* Bon., Rev. and Mag. Zool., 1854, p. 254.

*Leucolia cyanicollis*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 212.

*Blue Necked Azure Crown*, Gould, Mon. Troch., vol., v, p. 288.

*La Leucolie à cou bleu*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 212.

*Habitat*.—Peru.

*Male*.—Crown of the head, nape, and sides of neck metallic blue with greenish reflections. Upperside bronzy-green passing to golden on rump, and uppertail-coverts. Tail bronzy-green, all the laterals crossed near the tip with an obscure brown band. Underside pure white, flanks white washed sparingly with pale golden feathers. Wings purple-brown. Maxilla black. Mandible flesh colour, with black tip.

Total length,  $3\frac{1}{2}$ in. Wing,  $2\frac{2}{8}$ . Tail,  $1\frac{3}{8}$ . Culmen,  $\frac{7}{8}$ .

Female unknown; but probably like the male, less metallic on head and sides of neck.

This very rare species was discovered in Peru, by the well-known traveller Warszewicz.

\*226 URANOMITRA PELZENI, Tacz., P.Z.S., 1879, p. 239.

*Leucolia pelzeni*, Tacz. P.Z.S., 1879, p. 239.

*La Leucolie de Pelzen*.

*Habitat*.—Peru.

*Female*.—Rostrum subarquatum, dimidia parte corporis sublongius; pileo viridi-nitido; corpore supra viridi-subcupreo; cauda subtruncata, vix emarginata; rectricibus viridi-aeneis, externis in apice cinereis et macula longitudinali fusca notatis; corpore subtus albo sericeo; lateribus colli et capitis maculis splendidis viridi-caeruleis ornatis; lateribus epigastri viridi maculatis; ventris lateribus viridibus; subcandalibus albis.

Head shining green. Rest of upperside bronzy-green. Tail nearly truncate, median rectrices shortest shining green, slightly bronzy, lateral and outermost green, less brilliant with a subterminal black bar and gray tips. Wings purplish-brown. Underside pure white. Sides of neck, breast, and flanks spotted with shining bluish pale green. Undertail-coverts pure white. Maxilla black. Mandible flesh-colour, with black tip. Feet black.

Length of wing, 53 mill. Tail, 33. Culmen, 22.

This species, unique in Warsaw Museum, was discovered in May 1878, at Guajungo, Upper Marañon, by Mr. Stolzmann.

I believe it to be the female of *U. cyanicollis*.

\*227. URANOMITRA NEGLECTA, Elliott, Ibis, 1877, p. 140.

*Ornismyia bicolor*, d'Orb and Lafr., Syn. Av., 1838, t. ii., p. 30.

*Bar-tailed Emerald*, Gould, Mon. Troch., Suppl., 1886, p. 75.

*Le Thaumantias négligé*, Muls., Hist. Nat. Ois. Mou., 1878, t. iv., p. 175.

*Habitat*.—Bolivia.

*Male*.—Top of head, nape, and mantle green; throat and upperpart of breast brilliant metallic blue, the white base of the

feathers showing amid the blue; back, rump, and uppertail-coverts light greenish-bronze. Wings purplish. Undertail-coverts pale brown, margined with white. Tail pale greenish-bronze, with a subterminal black bar on lateral feathers. Maxilla black, mandible flesh colour. Feet black. "Elliot Synopsis, Troch., p. 205."

Total length,  $3\frac{1}{4}$  in. Wing, 2. Tail,  $1\frac{1}{2}$ . Bill,  $\frac{3}{4}$ .

*Female*.—Upperparts, sides of throat, and flanks shining green. Centre of throat and underparts whitish, spotted with light metallic green. Tail like the male, tips of lateral feathers whitish. Undertail-coverts white. Wings purple. Bill like the male. Feet black.

Total length,  $3\frac{3}{4}$  in. Wing, 2. Tail,  $1\frac{1}{4}$ . Bill,  $\frac{3}{4}$ . "Elliot, loc. c."

228. URANOMITRA VIRIDICEPS, Gould, P.Z.S., 1860, p. 307.

*Green-headed Emerald*, Gould, Mon. Troch., vol. v, p. 295.

*La Leucolie à calotte verte*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 229.

*Habitat*.—Ecuador.

*Male*.—Head and sides of neck metallic green. Upper-side shining bronzy-green, passing to reddish-golden on rump and uppertail-coverts. Median rectrices bronze, lateral pale bronze with a subterminal bar of brown near the tips, which are grayish-bronze. Throat, centre of breast, abdomen, and undertail-coverts white. Sides of breast and flanks, white washed with green. Wings purplish-brown. Maxilla black. Mandible flesh colour, with black tip.

Total length, 4 in. Wing,  $2\frac{2}{8}$ . Tail,  $1\frac{2}{8}$ . Culmen,  $\frac{7}{8}$ .

*Female*.—Head shining green. Upperside dull bronzy-green. Tail greenish-bronze with subterminal blackish bar on lateral feathers. Underside white. Sides of breast and flanks sparingly washed with green. Wings purplish-brown. Same size as male.

I have a male with the head and sides of neck metallic bluish-green. My specimens were collected in Ecuador, by Buckley. It is a rare species.

\*229. URANOMITRA TACZANOWSKII, Sclater, P.Z.S., 1879, p. 146.

*Leucolia taczanowskii*, Deslongch, Cat. Descr. Troch., vol. i., p. 301.



*Taczanowski's Emerald*, Gould, Mon. Troch., Suppl., 1886, p. 79.

*La Leucolie de Taczanowski.*

*Habitat*.—Guayungo, Peru.

Supra metallice viridis, in capite cupreo lavatus, plumis subtus cinereis; alis fuscis, tectricibus dorso concoloribus; cauda aequali, supra dorso concolori, versus apicem cupreo-tincta, subtus fusca, versus apicem cupreo-virescente; corpore subtus albo, lateraliter et in crisso praecipue pallido cinereo perfuso; gutture toto punctis minutis, cordiformibus, nitenti-viridibus oblecto; rostro forti, paulum incurvo.

Total, length, 4in. Alae,  $2\frac{6}{8}$ . Candae,  $1\frac{5}{8}$ . Rostri,  $\frac{9}{8}$ .

Obs. Sp. *Th. viridicipiti*, Gould, ut videtur, affinis rostro fortiusculo, canda aequali, et maculis gutturis minutis insignis. "Selat, loc. cit."

This species was discovered at Guajungo, Peru, by Mess. Stolzmann and Jelski.

230. URANOMITRA COLUMBIANA, Boucard, Hum. Bird, 1892, p. 82.

*Columbian Emerald.*

*La Leucolie de Colombie.*

*Habitat*.—Columbia.

*Male*.—Head and sides of neck metallic green. Upperside golden-green. Median rectrices bronze. Lateral purplish-bronze, with a wide subterminal brownish-black bar. Throat, centre of addomen, anal region, and undertail-coverts white. Flanks golden-green. Wings purple-brown. Maxilla black. Mandible flesh colour with black tip.

Total length,  $3\frac{6}{8}$ in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{3}{8}$ . Culmen,  $\frac{7}{8}$ .

*Female*.—Head and back bronzy-green, passing to reddish-golden on rump and uppertail-coverts. Tail bronze, lateral bronze with a subterminal brownish-black bar, and gray tips. Throat, centre of abdomen, lower part of vent and undertail-coverts white. Sides of neck and breast shining green. Flanks golden-green. Bill like the male. Same size as male.

Types of both sexes in my collection.

This species is closely allied to *U. niveipectus*, but can be easily distinguished by the colour of mandible.

231. URANOMITRA MILLERI, Bourc. P.Z.S., 1847, p. 43.

*Polytmus milleri*, Gray, Gen. Birds, vol. i., p. 108.

*Thaumatias milleri*, Bon., Consp. Gen. Av., 1850, vol. i, p. 78.

*Agyrtria milleri*, Reich., Aufz. der Col., 1853, p. 10.

*Leucolia milleri*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 225.

*Miller's Emerald*, Gould, Mon. Troch., vol v., p. 296.

*La Leucolie de Miller*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 226.

*Habitat*.—Columbia.

*Male*.—Head and sides of neck metallic green. Upperside bronzy-green passing to golden on rump and uppertail-coverts. Median rectrices pale bronze, lateral grayish-bronze with a wide subterminal brownish-black bar. Underside white, washed with green on sides of breast, and on flanks. Wings purplish-brown. Maxilla black. Mandible flesh colour with black tip.

Total length,  $3\frac{2}{8}$  in. Wing, 2. Tail,  $1\frac{1}{4}$ . Culmen,  $\frac{5}{8}$ .

*Female*.—Forehead dark shining green. Rest of upperside bronze-green slightly golden on rump and uppertail-coverts. Tail bronze with a wide subterminal blackish bar on lateral feathers, which have gray tips. Underside like the male with less green on flanks. Undertail-coverts whitish-gray.

It resembles *U. viridiceps*, but is a much smaller species. According to Bourcier, it was discovered by Natterer, on Rio Negro.

232. URANOMITRA WHITELYI, Boucard, Hum. Bird, 1893, vol. iii., p. 8.

*Whitely's Emerald*.

*La Leucolie de Whitely*.

*Habitat*.—Annai (B. Guiana).

*Male*.—Head and sides of neck metallic green. Upperside bronze-green. Median rectrices bronze, lateral bronze, with a subterminal blackish bar. Throat, breast, and abdomen pure white. Flanks golden-green. Undertail-coverts white, with centre pale gray. Wings purplish-brown. Bill black.

Total length,  $3\frac{3}{8}$  in. Wing, 2. Tail,  $1\frac{2}{8}$ . Culmen,  $\frac{5}{8}$ .

*Female*.—Head and sides of neck shining green, but not so brilliant as in the male. Upperside bronze-green. Underside white. Flanks white, washed with green. Tail bronze, lateral with a brown subterminal bar and tips margined with gray.

This new species, discovered by Mr. Henry Whitely in British Guiana, is closely allied to *U. milleri*, but can be distinguished easily from that species, by its black bill.

Types in Boucard's Museum.

233. URANOMITRA NIVEIPECTUS, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 33.

*Thaumatias chionopectus*, Gould, Mon. Troch., 1859, p. 5.

*Polytmus chionopectus*, Léotard, Ois. Trinid., 1866, p. 140.

*Snowy-throated Emerald*, Gould, Mon. Troch., vol. v., p. 293.

*La Leucolie à poitrine d'un blanc de neige*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 228.

*Habitat*.—Trinidad.

*Male*.—Head and sides of neck metallic golden-green in some specimens, in others metallic green. Upperside shining coppery-green, more coppery on rump and uppertail-coverts. Tail purplish-bronze, with a wide subterminal purplish-brown bar on lateral feathers. Throat and centre of abdomen pure white. Bar in middle of breast and flanks golden-green. Undertail-coverts greyish with white margins. Wings purplish-brown. Bill black.

Total length  $3\frac{3}{4}$  in. Wing, 2, Tail,  $1\frac{2}{8}$ . Culmen,  $\frac{6}{8}$ .

*Female*.—Upperside shining bronze green. Uppertail-coverts coppery. Underside white, washed with green on sides of neck, on breast and flanks. Tail beneath bronze passing to brownish-black, with gray tips on lateral feathers. Bill black. Same size as male.

Rather common in Trinidad.

GENUS LXVII. **Cyanomyia**, Bon., Rev. and Mag., Zool., 1854, p. 254.

*Leucolia*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 211.

TYPE: *T. cyanocephala*, Lesson.

Bill straight, acutely pointed, longer than the head, broad at base. Wings long, narrow, nearly reaching the end of tail.



Tail slightly forked. Median rectrices slightly smaller than the next ones, which are also slightly smaller than the three others. These of same length. Tarsi partly clothed. Sexes alike.

*Habitat*.—Mexico and Central America.

234. *CYANOMYIA CYANOCEPHALA*, Lesson, Suppl. Ois. Mou., 1831, p. 134.

*Polytmus verticalis*, Gray, Gen. Birds, vol. i., p. 109.

*Uranomitra cyanocephala*, Reich., Aufz. der Col., 1853, p. 10.

*Agyrtria faustinae*, Reich., Troch. Enum., 1855, t. i., p. 7.

*Cyanomyia guatemalensis*, Gould, Int. Troch., 1861, p. 148.

*Uranomitra lessoni*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 41.

*Leucolia cyanocephala*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 219.

*Black-billed Azure Crown*, Gould, Mon. Troch., vol. v., p. 286.

*La Leucolie à calotte d'azur*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 220.

*Habitat*.—Mexico and Guatemala.

*Male*.—Top of head metallic blue with greenish reflections in certain lights. Upperside bronzy-green, passing to bronzy-brown on lower part of back and uppertail-coverts. Tail pale green-bronze. Throat, middle of breast, and abdomen white. Sides of neck, breast and flanks pale bronzy-green. Undertail-coverts pale bronze, edged with grayish-white. Maxilla black. Mandible flesh colour with black tip. Wings purplish-brown.

Total length, 4in. Wing,  $2\frac{1}{2}$ . Tail,  $1\frac{5}{8}$ . Culmen,  $\frac{6}{8}$ .

*Female*.—Exactly like the male, but the green on sides of breast and flanks, slightly paler.

235. *CYANOMYIA QUADRICOLOR*, Vieillot, Enc. Méth., t. iii., p. 573.

*Polytmus quadricolor*, Gray, Gen. Birds, vol. i. p. 119.

*Trochilus verticalis*, Licht. Preis. Verz., Thier., 1830.

*Uranomitra quadricolor*, Reich., Aufz. der Col., 1853, p. 10.

*Leucolia quadricolor*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 215.

*Uranomitra ellioti*, Berl., P.U.S., Nat. Mus., vol. xi., p. 562.

*Red-billed Azure Crown*, Gould, Mon. Troch., vol. v., p. 284.

*La Leucolie quadricolore*, Muls., Hist. Nat. Ois., Mou., 1874, t. i., p. 216,

*Habitat*.—Mexico.

*Male*.—Top of head metallic blue. Upperside pale bronzy-brown. Tail shining bronzy-green. Underside pure white, tinged on sides of neck, breast, and flanks with some few bluish feathers. Wings purple-brown. Bill coral red, with black tips.

Total length,  $4\frac{2}{8}$  in. Wing,  $2\frac{2}{8}$ . Tail,  $1\frac{3}{8}$ . Culmen,  $\frac{7}{8}$ .

236 CYANOMYIA VIOLICEPS, Gould, Ann. Mag. Nat. Hist., 1859, p. 97.

*Uranomitra violiceps*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 41.

*Leucolia viridiceps*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 213.

*Violet Crown*, Gould, Mon. Troch., vol. v., p. 285.

*La Leucolie à calotte violette*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 214.

*Habitat*.—S. Mexico.

*Male*.—Differs only from *C. quadricolor* by the colour of its tail, which is bronzy-red, and by the feathers on sides of neck, breast, and flanks, which are greenish.

Total length,  $4\frac{2}{8}$  in. Wing,  $2\frac{3}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{7}{8}$ .

This species was discovered by me, in 1857, at Oaxaca, South Mexico. It is rare in the collections.

\*237. CYANOMYIA VIRIDIFRONS, Elliot, Ann. and Mag., Nat. Hist., 1871, vol. viii., p. 267.

*Green-fronted Crown*, Gould, Mon. Troch., Suppl., 1886, p. 72.

*La Leucolie à front vert*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 224.

*Habitat*.—Putla, (S. Mexico).

*Male*.—Differs only from *C. violiceps* by the colour of forehead, which is dark green, metallic in some lights.

It was discovered by my traveller, Eugène Rebouch.

The type is now in the New York Natural History Museum.

238. CYANOMYIA GUERRERENSIS, Salv. and Godm., Biol. cent. ameri., 1892.

*Guerrero Green Crown.*

*La Leucolie de Guerrero.*

*Habitat*.—Guerrero, Mexico.

This new species is very nearly allied to *C. viridifrons*, so much so, in fact, that I am of opinion that both belongs to the same species; I have one specimen, from Mazatlan, collected by Mr. Forrer, which I can only refer to that species. The type specimen of *C. viridifrons*, was collected at Putla, which is close to the state of Guerrero. It is therefore probable that it is found all over the Mexican west coast, from Tehuantepec to Mazatlan, and even more north.

The specimens from which Mon. Salwin and Godm described the species, were collected by Mrs. Smith.

\*239. CYANOMYIA MICRORHYNCHA, Elliot, Ibis, 1876, p. 316.

*Small-billed Azure Crown*, Gould, Mon. Troch., Suppl., 1886, p. 72.

*La Leucolie à petit bec.*

*Habitat*.—Honduras ?

*Adult*.—Top of head and occiput dark metallic blue. Hind neck and mantle shining metallic green; rest of upperparts bronzy-red. Throat, upper part of breast, and centre of abdomen white, with a few metallic green feathers scattered among the white ones. Flanks and undertail-coverts metallic bronzy-red. Wings deep brown, slightly shaded with purple. Tail brilliant metallic bronze.

Total length,  $3\frac{1}{2}$  in. Wing,  $2\frac{1}{4}$ . Tail,  $1\frac{1}{8}$ . Culmen,  $\frac{1}{2}$ . "Elliot, l.c."

Type in the New York Museum of Natural History.

GENUS LXVIII. **Leucippus**, Bon., Compt, Rend., 1850, p. 382.

*Talaphorus*, Muls., Hist. Nat. Ois. Mou., t. i., p. 257.

TYPE: *T. chionogaster*, Tschudi.



Bill longer than the head, narrow and rounded at base, nostrils exposed. Wings long and pointed, reaching the end of tail. Tail rounded, all the retrices of same length. Tarsi clothed to the toes. Sexes alike, dull.

*Habitat*.—Amazons, Peru, and Bolivia.

240. LEUCIPPUS CHIONOGASTER, Tsch. Faun. Per., 1844, p. 247.

*Trochilus turneri*, Bourc., Rev. Zool., 1846, p. 113.

*Polytmus chionogaster*, Gray, Gen. Birds, vol. i., p. 108.

*Thaumatias leucogaster*, Bon., Consp. Gen. Av., 1850, vol. i., p. 78.

*Leucippus pallidus*, Tacz., P.Z.S., 1874, p. 542.

*White-breasted Leucippus*, Gould, Mon. Troch., vol. v., p. 290.

*Le Leucippe à ventre blanc de neige*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 259.

*Habitat*.—Peru, and Bolivia.

*Male*.—Upperside pale bronzy-green. Tail feathers bronzy-green, with inner webs and shafts of lateral ones white. Underside pure white, sides of breast and flanks washed sparingly with pale green feathers edged with white. Maxilla black. Mandible flesh colour, with black tips.

Total length, 4in. Wing,  $2\frac{1}{4}$ . Tail,  $1\frac{1}{2}$ . Culmen, 1.

It is a rare species. My specimens were collected by MM. Buckley and Garlepp.

241. LEUCIPPUS CHLOROCERCUS, Gould, P.Z.S., 1866, p. 194.

*Spotted White-throat*, Gould, Mon. Troch., Suppl., 1886, p. 73.

*Le Leucippe à queue verte*, Muls., Hist., Nat. Ois. Mou., 1874, t. i., p. 258.

*Habitat*.—Upper Amazons and Peru.

This species resembles closely the preceding one. It differs in having the tail shining pale greenish-bronze with a faint subterminal bar of darker green, and gray tips. Bill shorter than in *L. chionogaster*, and all black.

Total length, 4in. Wing,  $2\frac{3}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{6}{8}$ .

I have only one specimen of this rare species collected by Hauxwell, at Nauta, in 1883.

GENUS LXIX. **Leucochloris**, Reich., Aufz. der Col., 1853, p. 10.

TYPE: *T. albicollis*, Vicillot.

Bill straight, longer than the head, wide at base, feathers of the forehead projecting slightly on the culmen, hiding the nostrils. Wings long, reaching the end of tail. Tail rounded, rectrices, including the median, even, excepting the outermost ones, which are very narrow, reaching the third of white tip of next one. Tarsi clothed. Sexes alike.

*Habitat*.—Brazil.

242. **LEUCOCHLORIS ALBICOLLIS**, Vieill., Nouv. Dict. Hist. Nat., 1818, t. xxiii., p. 426.

*Ornismyia albicollis*, Less., Ois. Mou., 1829, p. 184.

*Colibri albogularis*, Spix., Av. Bras., 1825, t. i., p. 81.

*Basilinna albicollis*, Less., Ind. Gen. and Syn. Ois., 1831, p. 25.

*Polytmus albicollis*, Gray, Gen. Birds, vol. i., p. 108.

*Thaumatias albicollis*, Bon., Cons. Gen. Av., 1850, vol. i., p. 78.

*Leucippus albicollis*, Reich., Troch. Enum., 1855, p. 8.

*Agyrtria albicollis*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 32.

*White-throat*, Gould, Mon. Troch., vol. v., p. 291.

*Le Leucochlore albicolle*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 262.

*Le Leucochlore à gorge blanche*.

*Habitat*.—Brazil.

*Male*.—Upperside shining golden-green. Median rectrices bronze-green, lateral bluish-black with white tips, outermost one bluish-black for half its length, the rest white. Chin, breast, and flanks shining green. Throat, abdomen, and undertail-coverts pure white. Wings purplish-brown. Maxilla black. Mandible flesh colour, with black tip.

Total length,  $4\frac{1}{2}$  in. Wing,  $2\frac{1}{2}$ . Tail,  $1\frac{6}{8}$ . Culmen,  $\frac{7}{8}$ .

*Female*.—Upperside golden-green. Median rectrices greenish-bronze with blue reflections, rest bluish-black with white tips. Chin white, spotted with minute greenish feathers.

Throat, abdomen, and undertail-coverts white. Breast and flanks shining green. Slightly smaller than the male.

GENUS LXX. **Aithurus**, Cab. and Hein., Mus. Hein., 1860, vol. iii., p. 50.

PHAETHORNIS, Less., Tab. Esp., Ois. Mou., 1829, p. 18.

POLYTMUS, Less., Ind. Gen., Syn. Gen., Troch., 1832, p. 16.

TROCHILUS, Gray, Gen. Birds, 1840, p. 14.

TYPE : *T. polytmus*, Linné.

Bill curved, wide at base, longer than the head. Rectrices narrow and pointed. Lateral, next the outermost one lengthened nearly three times that of the others. Tail deeply forked. Head crested, with elongated feathers on each side. Sexes unlike.

*Habitat*.—Jamaica.

243. AITHURUS POLYTMUS, Lin., Syst. Nat., 1766, vol. i., p. 189.

*Bourdonneur du Mango*, à longue queue, Abin., t. iii., p. 20, p. 49, fig. a.

*Oiseau Mouche à longue queue noire*, Sonn., Ed. de Buff., Hist. Nat., t. xvii., p. 215.

*Mellisuga Jamaicensis*, Briss. Ois., t. iii., p. 729.

*Mellivora avis maxima*, Sloane, Journ., vol. ii., p. 309, fig. 4.

*Trochilus polytmus*, Lin. Syst. Nat., Edit. 10, t. i., p. 120.

*Black-capped Humming-bird*, Lath., Gen. Syn., vol. ii., p. 748.

*Colibri à tête noire*, Vieill., Ois. Dor., t. i., p. 121, fl. 67.

*Ornismya cephalatra*, Less., Ois. Mou., p. 78, p. 17.

*Long-tailed black-capped Humming-bird*, Edwards' Birds, vol. i., p. 34.

*Trochilus maria*, Hill., Ann. Mag. Nat. Hist., 1849, vol. iii., p. 258.

*Polytmus cephalatra*, Bon., Consp. Gen. Av., 1850, p. 72.

*Black-capped Humming-bird*, Gould, Mon. Troch., vol. ii., p. 98.



*l'Aithure à tête noire*, Muls., Hist. Nat., Ois. Mou., 1874, vol. i., p. 336.

*Habitat*.—Jamaica.

*Male*.—Crown with elongated feathers, velvety-black. Upperside dark green. Throat and the whole of underside bright green. Undertail-coverts blue-black. Tail black. Wings brown. Bill red with black tips.

Total length, 9 in. Wing,  $2\frac{5}{8}$ . Tail,  $6\frac{1}{2}$ . Culmen,  $\frac{7}{8}$ .

*Female*.—Head brown. Upperside shining green. Underside white, tinged with green on the sides and flanks. Median rectrices bronze-green, lateral bronze-green on outer web, remainder bluish-black, tipped white on the two outermost ones. Upper mandible nearly all black. Lower mandible red with black tip.

Total length,  $3\frac{7}{8}$  in. Wing,  $2\frac{2}{8}$ . Tail,  $1\frac{6}{8}$ . Culmen,  $\frac{7}{8}$ .

Common in Jamaica.

GENUS LXXI. **Eupherusa**, Gould, Mon. Troch., 1857, part xiv.

TYPE :—*O. eximia*, Delattre.

Bill longer than the head, slightly curved. Wing long, reaching the end of tail. Tail even, with the exception of the outermost rectrice, which is slightly shorter than the others. Tarsi clothed. Hind toe shorter than the middle one. Sexes unlike.

*Habitat*.—Mexico and Central America.

244. EUPHERUSA EXIMIA, Del., Echo du Monde. sav., 1843, p. 1069.

*Saucerottia eximia*, Reich., Aufz. der Colib., 1853, p. 8.

*Amazilia eximia*, Reich., Troch. Enum., 1855, p. 8.

*Stripe-tail*, Gould, Mon. Troch., vol. v., p. 324.

*l'Euphéruse remarquable*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 272.

*Habitat*.—Guatemala.

*Male*.—Upperside golden-green, darker on head. Median rectrices dark bronze-green, nearly black on edges and tips, the two outermost ones on each side of inner webs white for

about two-thirds of their length, the rest bluish-black. Under-side luminous metallic, grass-green in some specimens, in others golden-green. Undertail-coverts white. Base of primaries and secondaries chestnut-red, rest purplish-black. Bill black. Feet flesh colour.

Total length,  $3\frac{6}{8}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{11}{16}$ .

*Female*.—Upperside golden-green. Underside grayish-white, washed sparingly with green, on sides of breast and flanks. Outermost feathers white for nearly their whole length.

Total length,  $3\frac{1}{2}$  in. Wing, 2. Tail,  $1\frac{3}{8}$ . Culmen,  $\frac{11}{16}$ .

Very abundant in Guatemala, where it was discovered by Delattre.

\*245. EUPHERUSA POLIOCERCA, Elliot, Ann. and Mag., Nat. Hist., 1871, p. 266.

*Gray Stripe-tail*, Gould, Mon. Troch., Suppl., 1886, p. 84.

*l'Euphéruse à quene blanche*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 271.

*Habitat*.—Putla, South Mexico.

*Male*.—Exactly the same as the preceding species, from which it differs only in having the three outermost rectrices white, with purplish-gray on the edges of outer webs and tips.

It was collected by my traveller, Eugène Reibouch, at Putla.

I killed that species several years before in Chinantla, Oaxaca; but I do not know what became of my specimens. Probably they were sold as *E. eximia*.

246. EUPHERUSA EGREGIA, Sclat. and Salv., P.Z.S., 1868, p. 389.

*Panama Stripe-tail*, Gould, Mon. Troch., Suppl., 1886, p. 85.

*l'Euphéruse distinguée*, Muls., Hist. Nat. Ois. Mou., 1876, t. i., p. 274.

*Habitat*.—Costa Rica, Veragua.

*Male*.—Exactly the same as *E. eximia*, and probably the same species. The only difference which I can see in the specimens which I collected in Costa Rica, and others received

from Veragua, is that the two outermost rectrices on each side of tail are white, to a longer extent than in *E. eximia*, margined and tipped with bluish-black.

GENUS LXXII. **Callipharus**, Elliot, Syn. H. Birds, 1879, p. 211.

CLOTHO, Muls., Cat. Ois. Mou., 1875, p. 9, (name already employed).

TYPE :—*E. nigriventris*, Lawrence.

Bill about as long as the head, straight, wide at base, graduating to a point at the tip. Frontal feathers not projecting on the culmen. Wings long and broad for their length. Tail moderate, slightly rounded. Undertail-coverts reaching half the length of the rectrices. Feet small. Tarsi partly clothed. Sexes entirely unlike. "Elliot, loc. cit."

*Habitat*.—Costa Rica and Veragua.

247 CALLIPHARUS NIGRIVENTRIS, Lawr., Proceed. Acad. Nat. Scien., Phil., 1867, p. 232.

*Eupherusa (Clotho) nigriventris*, Muls., Cat. Ois. Mou., 1875, p. 9.

*Thaumatias nigriventris*, Sclat and Salv., Nomencl., 1873, p. 92.

*Black-bellied Humming-bird*, Gould, Mon. Troch., Suppl., 1886, p. 83.

*l'Euphéruse à ventre noir*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 270.

*Habitat*.—Costa Rica and Veragua.

*Male*.—Forehead jet-black. Upperside golden-green. Four central rectrices dark greenish-bronze, the rest pure white tipped with brownish-black. Wing-coverts golden-green. Secondaries chestnut with purple tips, rest purplish. Underside jet-black. Flanks washed with bronze feathers. Vent and undertail coverts white. Bill and feet black.

Total length, 3in. Wing, 2. Tail,  $1\frac{2}{3}$ . Culmen,  $\frac{1}{2}$ .

*Female*.—Upperside bronzy-green. Median rectrices dark greenish-bronze, tipped black, remainder white. Underside ashy-gray. Wing like that of male. Bill black. Same size as male.



This rare and peculiar species was discovered in Veragua, by Mr. Endrés.

I have killed it at Naranjo, Costa Rica, in April, 1877.

My other specimens were collected in Veragua by Arce.

GENUS LXXIII. **Elvira**, Muls. and Verr., Class, Troch., 1865, p. 32.

TYPE: *T. chionurus*, Gould.

Bill shorter than the head, straight, with tip slightly curved. Nostrils slightly exposed. Wings narrow, pointed, longer than the tail. Tail slightly rounded. Tarsi clothed. Sexes unlike.

*Habitat*.—Costa Rica and Veragua.

248. ELVIRA CHIONURA, Gould, P.Z.S., 1850, p. 162.

*Leucippus chionurus*, Reich., Aufz. der Col., 1853, p. 11.

*Thaumantias chionura*, Bon., Rev. and Mag. Zool., 1854, p. 255.

*Elvira chionura*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 266.

*White-tailed Emerald*, Gould, Mon. Troch., vol. v., p. 300.

*l'Elvire à queue d'un blanc de neige*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 267.

*Habitat*.—Costa Rica and Veragua.

*Male*.—Upperside shining golden-green, sometimes dark green. Median rectrices bronzy-green, lateral white with black tips. Underside metallic emerald-green with golden reflections. Centre of abdomen and undertail-coverts pure white, some bronze feathers on undertail-coverts feathers in some specimens. Wings purplish-brown. Maxilla black. Mandible flesh colour with black tip.

Total length,  $3\frac{3}{8}$  in. Wing, 2. Tail,  $1\frac{3}{8}$ . Culmen,  $\frac{5}{8}$ .

*Female*.—Upperside shining-green. Median rectrices bronzy-green, the one next to it on each side, bronze-green with black tips, remainder white with subterminal black bar, and white tips. Underside grayish-white with green feathers on sides of breast and flanks. Wings purple-brown. Bill black.

Total length,  $3\frac{2}{8}$  in. Wing,  $1\frac{7}{8}$ . Tail,  $1\frac{2}{8}$ . Culmen,  $\frac{5}{8}$ .

This species was discovered in Veragua, by Mr. Warszewicz.

My specimens were collected in the same country, by Arce; others I collected in Costa Rica. These appear to be slightly smaller than the specimens from Veragua, but I don't think they can be separated.

GENUS LXXIV. **Lawrencius**, n.g.

TYPE :—*P. cupreiceps*, Lawrence.

Bill about the length of the head, strongly curved, graduating to a very acute point. Wings long, reaching the end of tail. Tail rounded. Median and outermost rectrices wide, slightly shorter than the others. Feet large for the size of the bird. Tarsi partly clothed. Nostrils partly exposed. Sexes unlike.

*Habitat*.—Costa Rica.

249. LAWRENCIUS CUPREICEPS, Lawr., Ann., N.Y., Lyc. Nat. Hist., 1866, vol. viii., p. 348.

*Thaumatias cupreiceps*, Sclat. and Salv., Nomencl., 1873, p. 92.

*Elvira cupreiceps*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 268.

*Copper Crown*, Gould, Mon. Troch., Suppl., 1886, p. 82.

*l'Elvire à tête cuivreuse*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 268.

*l'Elvire de Lawrence*.

*Habitat*.—Costa Rica.

*Male*.—Top of head metallic bronze at base of maxilla, then shining coppery. Upperside golden-green. Uppertail-coverts coppery-red. Median rectrices shining bronze with reddish reflections, lateral pure white with a tinge of grayish margin at tips. Underside luminous metallic emerald-green with golden reflections. Anal region and thighs white. Wings purplish-brown. Maxilla black. Mandible flesh colour, with black tip.

Total length,  $3\frac{2}{8}$  in. Wing,  $1\frac{7}{8}$ . Tail,  $1\frac{2}{8}$ . Culmen,  $\frac{5}{16}$ .

*Female*.—Upperside shining green. Slightly coppery on head. Uppertail coverts coppery. Median rectrices shining

bronze. Lateral, white, with a slight blackish subterminal bar near the tips. Underside white with a grayish tint, and green feathers on sides of throat, neck, breast, abdomen, and flanks. Rest like the male.

Total length,  $3\frac{3}{8}$  in. Wing,  $1\frac{7}{8}$ . Tail,  $1\frac{2}{8}$ . Culmen,  $\frac{5}{16}$ .

This beautiful and rare species was discovered in Costa Rica, by M. Carmiol. The type is in the National Museum of Washington.

I found this species at Naranjo, Costa Rica, on the Atlantic slope.

It is very rare.

I have made a new genus with this remarkable species, which I dedicate to Mr. Lawrence, the celebrated American Ornithologist.

GENUS LXXV. **Polytmus**, Brisson., Ornith., 1760.

*Thaumatias*, Bon., Compt. Rend., 1850, p. 382.

*Chrysobronchus*, Bon., Rev. and Mag. Zool., 1854, p. 252.

TYPE: *T. thaumantias*, Linné.

Bill much longer than the head, slightly curved, wide at base, and graduating to a point. Nostrils exposed. Wings long, reaching nearly the end of the tail. Rectrices narrow, of unequal length, rounded at tip.

*Habitat*.—Trinidad, Venezuela, Guiana, Columbia and Brazil.

250. POLYTMUS THAUMANTIAS, Linné, Syst. Nat., 1766, vol. i., p. 489.

*Trochilus virescens*, Dumont, Dict., Sc. Nat., 1818, p. 49.

*Ornismya viridis*, Less., Ois. Mou., 1829, p. 178.

*Leucippus chrysobronchus*, Reich., Aufz. der Col., 1853, p. 11.

*Thaumantias linnei*, Bon., Rev. and Mag. Zool., 1854, p. 255.

*Chrysobronchus virescens*, Bon., Rev. and Mag. Zool., 1854, p. 252.

*Golden-throated Humming-bird*, Gould, Mon. Troch., vol. iv., p. 230.



*Le Chrysobronche à queue blanche and verte*, Muls., Hist. Nat. Ois. Mou., 1874, vol. i., p. 277.

*Habitat*.—Trinidad, Columbia, Venezuela, Guiana and Brazil.

*Male*.—Upperside golden-green. Underside metallic yellowish-green. In some specimens from Bahia, the underside is of the most brilliant golden. A tuft of white feathers on each side of anal region. Undertail-coverts shining green, edged with white. Median rectrices shining green with the internal edges whitish for about half their length, lateral ones having a stripe of white on the outer web and tips white, outermost ones green for about two-thirds of their length on inner web, rest white. In some specimens the outer webs and tips are white, the rest is shining green. Maxilla sometimes black, sometimes light brown. Mandible flesh colour with black tips. Wings purplish-brown.

Total length,  $4\frac{2}{8}$  in. Wing,  $2\frac{1}{2}$ . Tail,  $1\frac{6}{8}$ . Culmen,  $\frac{7}{8}$ .

*Female*.—I am not certain that the female is of the same colouration as the male. I have several specimens which I consider as females. Here is the description:—Upperside golden-green. Throat and breast whitish, speckled with many metallic golden-green feathers. Abdomen and flanks pale rufous. Undertail-coverts white. Median rectrices bronze-green, slightly tipped white, lateral bronze-green for about two-thirds of their length, the rest white.

251. *Polytmus viridissimus*, Vieill., Ois. Dor., t. i., p. 84.

*Ornismya viridis*, Less. Troch., 1831, p. 96.

*Trochilus theresiæ*, Da Silva., Mai. Min. Bras., 1843, p. 2.

*Amazilia viridissima*, Bon., Consp. Gen. Av., 1850, vol. i., p. 77.

*Smaragdites viridissima*, Reich., Aufz. der Col., 1853, p. 7.

*Chrysobronchus viridissimus*, Bon., Rev. and Mag. Zool., 1854, p. 252.

*Chlorestes viridissimus*, Reich., Troch. Enum., 1855, p. 4.

*Thaumatias chrysurus*, Burm., Th. Bras., 1856, t. ii., p. 345.

*Green-tailed Humming-bird*, Gould, Mon. Troch., vol. iv., p. 231.

*Le Chrysobronche tout vert*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 280.

*Habitat*.—Guiana and Venezuela.

*Male*.—Upperside bronze-green. Underside shining grass-green in some, and metallic golden-green in others. Tail and undertail-coverts metallic grass-green. Maxilla black. Mandible flesh colour at base, the rest black. Wings purplish-black.

Total length,  $3\frac{6}{8}$  in. Wing,  $2\frac{2}{8}$ . Tail,  $1\frac{5}{8}$ . Culmen,  $\frac{7}{8}$ .

*Female*.—Upperside bronzy-green. Underside golden-green washed with whitish gray. Lateral feathers of tail tipped white. Undertail-coverts shining green edged with white. Rest of plumage like that of male.

252. *Polytmus leucorrhous*, Sclat. and Salv., P.Z.S., 1867, p. 584.

*Polytmus leucoproctus*, Gray, Handl. Birds, p. 128.

*Chrysobronchus leucorrhous*, Sclat and Salv., Nomenclator, p. 89.

*White-vented Golden-throat*, Gould, Mon. Troch., Suppl., p. 86.

*Le Chrysobronche à sous caudales blanches*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 281.

*Habitat*.—Rio Negro (Brazil) and Peru.

*Male*.—Exactly like the preceding species from which it differs only by the forehead, which is brown, and the undertail-coverts pure white.

*Female*.—Differs by the outertail feathers tipped white. This rare species was discovered by the celebrated Naturalist, Mr. A. Wallace.

GENUS LXXVI. **Doleromyia**, Bon., Rev. and Mag. Zool., 1854, p. 249.

*Dolerisca*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 6.

TYPE: *T. fallax*, Bourcier.

Bill longer than the head, straight, broad, and flat at base. Wings long, primaries rather broad, the first slightly pointed. Tail even, feathers broad and very slightly pointed. Feet large, tarsi partly feathered. Sexes alike.

*Habitat*.—Venezuela.

253. *DOLEROMYIA FALLAX*, Bourc., Rev. Zool., 1843, p. 103.  
*Lampornis fulviventeris*, Gould, P.Z.S., 1846, p. 88.  
*Polytmus fallax*, Gray, Gen. Birds, vol. i., p. 108.  
*Leucippus fallax*, Bon., Consp. Gen. Av., 1850, p. 73.  
*Dolerisca fallax*, Cab. and Hein., Mus. Hein., 1860, t. iii.  
 p. 6.

*Dolerisca cervina*, Gould, Int. Troch., 1861, p. 56.

*Buff-breasted Leucippus*, Gould, Mon. Troch., vol. ii., p. 56.

*La Doleromye trompeuse*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 206.

*Habitat*.—Venezuela.

*Male*.—Upperside olive-green tinged with gray. Median rectrices bronzy-green, lateral bronze green at base with a subterminal brownish-black bar and largely tipped with white. Throat, breast, and abdomen pale reddish-buff. A tuft on each side of anal region, and undertail-coverts white. Wings purplish-brown. Maxilla black. Mandible flesh colour with black tip.

Total length, 4in. Wing,  $2\frac{3}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{7}{8}$ .

It is a rare species.

GENUS LXXVII. **Basilinna**, Boié, Isis, 1831, p. 546.

*Heliopectica*, Gould, Int. Troch., 1861, p. 60.

TYPE: *T. leucotis*, Vieillot.

Bill straight, about the length of the head. Wings long, reaching the end of tail. Tail nearly even, slightly forked, rectrices broad. Tarsi clothed, hind toe shorter than the middle one. Sexes unlike.

*Habitat*.—California, Mexico, and Guatemala.

254. *Basilinna leucotis*, Vieill., Nouv. Dict. Hist. Nat., t. xxii.  
 p. 428.

*Trochilus melanotis*, Sw., Phil. Mag., 1827, p. 441.

*Ornismya arsenii*, Less., Ois. Mou., 1829, p. 60.

*Hylocharis leucotis*, Gray, Gen. Birds, vol. i., p. 114.

*Heliopectica melanotis*, Gould, Mon. Troch., vol. ii., p. 64.

*Thaumatias leucotis*, Bon., Consp. Gen. Av., 1850, p. 78.



*Sapphironia lucida*, Sclat., P.Z.S., 1858, p. 207.

*Coeligena leucotis*, Muls., Hist. Nat. Ois. Mou., t. i., p. 187.

*Black-eared Humming-bird*, Gould, Mon. Troch., vol. ii., p. 65.

*Le Coeligène à oreilles blanches*, Muls., Hist. Nat. Ois. Mou., t. i., p. 188.

*Habitat*.—Mexico and Guatemala.

*Male*.—Forehead and chin dark metallic sapphire-blue. Upperside bronzy-green, reddish and darker on neck. Feathers on rump tinged with rufous. Throat and breast metallic emerald-green. Abdomen and flanks shining-green washed with gray. Undertail-coverts grayish-brown with centre greenish-brown. Wings purple. Median rectrices bronze-green, lateral black with external edges and tips bronze. Bill flesh colour with black tips, more conspicuous on maxilla. A tuft of white feathers on each side of anal region.

Total length,  $3\frac{3}{4}$  in. Wing,  $2\frac{1}{4}$ . Tail,  $1\frac{5}{8}$ . Culmen,  $\frac{5}{8}$ .

*Female*.—Upperside bronze-green, slightly rufous on forehead. Underside pale gray, washed with green feathers on throat, sides of breast and flanks. Rectrices like that of male, lateral ones tipped with grayish-white. Maxilla black. Mandible flesh colour with black tip. Ear-coverts black. A white line above and behind the eye.

This species is rather abundant in Mexico, where I have collected many specimens of both sexes. I have also one specimen from Guatemala, where it is a rare species.

\*255. *BASILINNA XANTHUSI*, Lawr., Ann. Lyc., Nat. Hist. N. Y., 1860, p. 109.

*Heliopaedica castaneo-cauda*, Lawr., Ann. Lyc., Nat. Hist. N. Y., 1860, p. 145.

*Heliopoedica xanthusi*, Gould, Mon. Troch., vol. ii., p. 64.

*Coeligena xanthusi*, Muls., Hist. Nat. Ois. Mou., t. i., p. 190.

*Xanthus Humming-bird*, Gould, Mon. Troch., vol. ii., p. 65.

*Le Coeligène de Xanthus*, Muls., Hist. Nat. Ois. Mou., t. i., p. 190.

*Habitat*.—Cape St. Lucas (California).

*Male*.—Differs from *B. leucotis*, in having the underside rufous. Throat pale grass-green. Tail dark chestnut, tipped with bronze. Bill flesh colour, with black tips.

Total length,  $3\frac{2}{8}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{3}{8}$ . Culmen,  $\frac{5}{8}$ .

*Female*.—Upperside shining green. Front and entire underside rufous. Median rectrices green, lateral rufous, with black spots on the webs near the tips.

This extremely rare species was discovered in California by Mr. John Xanthus. It was dedicated to him by Mr. Lawrence, of New York. The type is in the collection of the Smithsonian Institution.

GENUS LXXVIII. **Timolia**, Muls., Cat. Ois. Mou., 1875, p. 23.

TYPE: *T. lerchi*, Mulsant and Verreaux.

Allied to the genus *Eucephala*. Bill longer than the head, curved. Feathers of forehead projecting on the culmen. Nostrils hidden. Tail forked. Tarsi clothed.

*Habitat*.—Columbia.

\*256. TIMOLIA LERCHI, Muls. and Verr., Ann. Linn. Soc., Lyon., 1868.

*Eucephala lerchi*, Muls. and Verr., Hist. Nat. Ois. Mou., 1878, t. iv., p. 191.

*Lerch's Sapphire*, Gould, Mon. Troch., Suppl., 1886, p. 94.

*L'Eucéphale de Lerch*, Muls., Hist. Nat. Ois. Mou., 1878, t. iv., p. 192.

*Habitat*.—Columbia.

*Male*.—Fore part of head and a spot on the chin shining deep blue. Upper parts dark grass-green, passing into reddish-bronze on the upper tail-coverts. Entire underparts grass-green. Undertail-coverts olive-green. Wings purplish-brown. Tail steel-black. Maxilla black. Mandible flesh colour, with black tip.

Total length,  $4\frac{1}{8}$  in. Wing,  $2\frac{1}{2}$ . Tail,  $1\frac{5}{8}$ . Culmen,  $\frac{13}{16}$ . "Elliot, loc. cit."

Type unique in the collection of the Museum of Natural History of New York. "Ex. Elliot's Collection."

This remarkable species was discovered in Columbia by Doctor Lerch, to whom it was dedicated by MM. Mulsant and Verreaux.

GENUS LXXIX. **Eucephala**, Reich., Aufz. der Col., 1853, p. 10.

*Ulysses*, Muls., Cat. Ois. Mou., 1875, p. 12.

TYPE: *T. grayi*, Delattre and Bourcier.

Bill longer than the head, rather broad at base, sharply pointed at tip, nostrils exposed. Wings long and pointed, reaching the end of tail. Tail slightly forked, rectrices broad. Tarsi clothed. Sexes unlike.

*Habitat*.—Ecuador, Columbia.

257. EUCEPHALA GRAYI, Delatt. and Bourc., Rev. Zool., 1846, p. 307.

*Hylocharis grayi*, Gray, Gen. Birds, vol. i., p. 115.

*Sapphironia grayi*, Bon., Rev. and Mag. Zool., 1854, p. 256.

*Ulysses grayi*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 41.

*Blue-headed Sapphire*, Gould, Mon. Troch., vol. v., p. 330.

*l'Ulysse de Gray*, Muls., Hist. Nat. Ois., Mou., 1875, t. ii., p. 42.

*Habitat*.—Ecuador and Columbia.

*Male*.—Head and chin deep metallic prussian-blue. Upper-side shining green, golden in some specimens. Tail steel-blue. Throat, breast, abdomen and flanks metallic emerald green. Undertail-coverts shining green, edged with grayish-white. Wings purple-brown. A tuft of white feathers on each side of anal region. Maxilla flesh colour at base, rest black. Mandible flesh colour with black tips.

Total length,  $4\frac{2}{8}$  in. Wing,  $2\frac{1}{2}$ . Tail,  $1\frac{5}{8}$ . Culmen,  $\frac{7}{8}$ .

*Female*.—Upperside golden-green. Tail bronzy-green at base with bluish edges. Tips spotted with grayish-white. Underside grayish-white, speckled with bronzy-green feathers on throat, breast, and flanks. Undertail-coverts shining green, edged with gray. Bill flesh colour at base, rest black. Mandible flesh colour with black tip. Same size as male.

This beautiful species was discovered by Delattre, at Popayan (Columbia), and was dedicated to the late Mr. John Gray, who was, for a long time, Curator of the Zoological Department of the British Museum.

I have in my collection three typical specimens, male and



female, collected by Delattre (Ex Collection Bourcier), and several specimens collected by Buckley in Ecuador.

GENUS LXXX. **Chlorestes**, Reich., Aufz. der Col., 1853, p. 7.

HALIA, Muls. and Verr., Cat. Ois. Mou. 1875, p. 12.

TYPE: *Tcyanogenys*, Wied.

Bill straight, about the length of the head, rather broad at base, sharply pointed. Nostrils exposed. Wings long and pointed, reaching nearly the end of tail. Tail rounded, rectrices narrow, outermost one slightly shorter than the others. Feet small. Tarsi clothed. Sexes unlike.

*Habitat*.—Trinidad, Venezuela, Guiana, Brazil, Ecuador, and Peru.

\*258. CHLORESTES CYANOGENYS, Max Wied, Beit. (1825-33), t. iv., p. 10.

*Ornismya wiedi*, Less., Suppl. Ois. Mou., 1829, p. 150.

*Hylocharis cyanogenys*, Gray, Gen. Birds, vol. i, p. 115.

*Saucerottia cyanogenys*, Reich., Aufz. der Col. 1853, p. 7.

*Eucephala cyanogenys*, Gould, Int. Troch., 1861, p. 167.

*Blue-faced Sapphire*, Gould, Mon. Troch., Suppl. 1886, p. 93.

*l'Eucephale de Wied*, Muls., Hist. Nat. Ois. Mou., 1878, t. iv., p. 190.

*Habitat*.—Brazil.

*Male*.—Maxilla and feet black, the mandible flesh colour with black tips. Upperpart golden-green with reddish-bronze reflections. Primaries purplish-brown. Tail dark steel-blue with blue and golden reflections. Chin beautiful blue as in *E. caerulea*. Anal region white.

Total length about 3 in. Wing,  $1\frac{11}{16}$ . Tail,  $\frac{7}{8}$ . Bill,  $\frac{5}{8}$ .

*Female*.—Differs in having the under part grayish-white (Pr. Max. l.c.)

I have several specimens from Bahia, which correspond exactly to the above description, excepting the blue and golden reflections of tail. The bill is shorter by  $\frac{1}{8}$  inch from the ordinary specimens of *Chlorestes caerulea*; but I am not certain at all that it should be kept as a separate species, as I

have specimens from Trinidad and Venezuela with the golden colour of back. I have also one male specimen from Venezuela with the whole of the underside, excepting the chin of the most brilliant golden-green.

259. *CHLORESTES CAERULEA*, Vieill., Nouv. Dict. Hist. Nat. 1817, p. 361.

*Ornismya audeberti*, Less., Ois. Mou., 1839, p.p. 30-164.

*Trochilus audeberti*, Wied. Betr., t. iv., p. 67.

*Hylocharis caerulea*, Gray, Gen. Birds, vol. i., p. 114.

*Thaumatias caeruleus*, Bon., Consp. Gen. Av., 1850, vol. i., p. 78.

*Encephala caerulea*, Gould, Mon. Troch., vol. v., p. 335.

*Blue-chinned Sapphire*, Gould, Mon. Troch., vol. v., p. 335.

*l'Eucephale à gorge bleue*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 32.

*Habitat*.—Trinidad, Venezuela, Guiana, Brazil, and Peru.

*Male*.—Upperside dark grass-green in some specimens, in others golden-green. Tail steel-blue. Chin shining blue. Rest of underside luminous yellowish-green in some specimens, in others metallic emerald-green. Undertail-coverts shining green. Anal region white. Maxilla black. Mandible flesh colour with black tip. Wings purple.

Total length,  $3\frac{6}{8}$  in. Wing, 2. Tail,  $1\frac{3}{8}$ . Culmen,  $\frac{5}{8}$ .

*Female*.—Upperside like that of male. Underside grayish white more or less tipped with green on sides of neck, breast, abdomen, and flanks.

It is very abundant in Trinidad and Guiana, and it varies very much in the colouring of its plumage.

\*260 *CHLORESTES CHLOROCEPHALA*, Bourcier, Rev. and Mag. Zool., 1854, p. 457.

*Agyrtria chlorocephala*, Reich., Troch. Enum., 1855, p. 7.

*Leupidopygia chlorocephala*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 40.

*Hylocharis chlorocephalus*, Bon., Rev. and Mag. Zool., 1854, p. 255.

*Green-headed Sapphire*, Gould, Mon. Troch., vol. v., p. 332.

*l'Eucephale à tête verte*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 30.

*Habitat*.—Ecuador.

*Male*.—Top of head greenish-blue. Upperside bronzy-green. Uppertail-coverts coppery-bronze. Chin, throat, and abdomen, shining grass-green. Thighs white. Undertail-coverts dark olive margined with white. Tail steel-blue. Bill black, base of mandible flesh colour.

Length of bill, 33 mill. Wing, 55 mill. Tail, 38 mill, middle feathers, 30 mill. "Bourcier."

*Female*.—Unknown.

Type in British Museum. "Ex. Gould's Collection."

\*261 CHLORESTES SMARAGDO-CAERULEA, Gould, Mon. Troch., vol. v., p. 331.

*Eucephala smaragdinea*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 37.

*Green and blue Sapphire*, Gould, Mon. Troch., vol. v., p. 331.

*l'Eucéphale émeraude*, Muls., Hist. Nat. Ois. Mou. 1875, vol. ii., p. 38.

*Habitat*.—Novo-Friburgo, "Brazil."

*Male*.—Crown of the head and throat glittering greenish-blue, imperceptibly passing into the glittering green of the breast; back of the neck and uppersurface golden-green; undertail-coverts green inclining to purple on some of the feathers; thighs brown; tail bluish-black, the two outer feathers on each side slightly tipped with white; bill black, with the exception of the basal half of the under mandible which is flesh-colour.

Total length,  $3\frac{3}{4}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{3}{8}$ . Bill,  $\frac{7}{8}$ . "Gould loc. cit."

*Female* unknown.

This is a very rare species. The type is in the British Museum. "Ex. Coll. Gould."

\*262. CHLORESTES CAERULEO-LAVATA, Gould, P.Z.S., 1860, p. 306.

*Reeve's Sapphire*, Gould, Mon. Troch., vol. v., p. 333.

*l'Eucéphale à poitrine bleue*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 40.



*Habitat*.—San Paolo, Brazil.

*Male*.—Crown of the head greenish-blue, not very brilliant, but having a few conspicuous small bright blue feathers intermingled; throat and breast bright greenish-blue, passing into purer green on the flanks; back of the neck and back deep grass-green; wings purplish-brown; uppertail-coverts bronzy-orange; undertail-coverts bronzy purplish-brown; two middle tail feathers deep purplish-bronze, the next on each side is washed with bronze on its outer margin, the remaining feathers purplish-black; thighs grayish-white; the bill appears to have been reddish flesh-colour at the base of both mandibles and black at the tip.

Total length,  $3\frac{3}{4}$  in. Wing,  $2\frac{1}{4}$ . Tail,  $1\frac{1}{2}$ . Bill,  $\frac{7}{8}$ .  
"Gould, loc. cit."

I think it is still unique in the British Museum. "Type Ex. Gould's Collection."

\*263. CHLORESTES HYPOCYANEA, Gould, P.Z.S., 1860, p. 306.

*Blue-breasted Sapphire*, Gould, Mon. Troch., vol. v., p. 334.

*l'Eucéphale à poitrine bleue*, Muls., Hist. Nat. Ois. Mou., 1875, t. ii., p. 36.

*Habitat*.—Brazil?

*Male*.—Crown of the head, back of the neck, back, and flanks somewhat dull green. Throat and breast brilliant blue, passing into glittering green on the centre of the abdomen. Wings purplish-brown. Uppertail-coverts reddish-bronze. Undertail-coverts brownish-black with bronzy tips. Tail steel-black. Thighs brown. Upper mandible black. Basal two-thirds of the lower mandible flesh colour, the apical third black.

Total length,  $3\frac{1}{4}$  in. Bill,  $\frac{3}{4}$ . Wing, 2. Tail,  $1\frac{3}{8}$ . "Gould, loc. cit."

Type of species now in the British Museum. They have also a female, which resembles the female of *C. caerulea*.

It looks very much the same as *E. caeruleo-lavata*.—Edit.

\*264. CHLORESTES PYROPYDIA, Salv. and Godm., Ibis., 1891, p. 596.

*Fire rumped Sapphire*, Gould, Mon. Troch., Suppl., 1886, p. 92.

*l'Eucephale à croupion couleur de feu.*

*Habitat.*—Ecuador.

Closely allied to the preceding species from which it is distinguished by the metallic colour of the crown, which is bluish-green. Underside shining bluish-green, the whole of the middle of the throat washed with brighter blue. Lower part of back russet, with the uppertail-coverts coppery-reddish. Wings dusky. Tail steel-black, slightly rounded.

Total length,  $3\frac{4}{8}$  in. Wing,  $1\frac{9}{16}$ . Centre tail feathers,  $1\frac{1}{8}$ . Outer ones, 1. Bill,  $\frac{9}{16}$ .

Type of species in British Museum.

\*265. CHLORESTES SUBCAERULEA, Elliot, His., 1874, p. 87.

*Blue-breasted Sapphire*, Gould, Mon. Troch., Suppl., 1886, p. 92.

*l'Eucéphale à gorge et cou bleus*, Muls., His. Nat. Ois. Mou., 1875, t. ii., p. 35.

*Habitat.*—Brazil ?

*Male.*—Upperpart of head and back dull green, rest of back and upper-tail coverts dark green, with a rufous tinge dispersed all over these parts ; throat, breast, and centre of abdomen beautiful metallic caerulean-blue ; flanks shining grass-green. Lower part of abdomen covered by fluffy-white feathers. Undertail-coverts metallic green. Wings purple. Tail bluish-black. Maxilla black ; mandible yellow (in life possibly red), for its entire length, save the tip which is black. Feet brownish black. Thighs buffy-white.

Total length,  $3\frac{1}{4}$  in. Wing, 2. Tail,  $1\frac{2}{8}$ . Culmen,  $\frac{5}{8}$ . "Elliot, loc. cit."

Type unique in Elliot's Collection, now the property of the New York Museum of Natural History.

\*266. CHLORESTES (?) SCAPULATA, Gould, Int. Troch., 1861, p. 166.

*Black-bellied Sapphire*, Gould, Mon. Troch. Suppl., p. 91.

*l'Eucéphale à épaulettes*, Muls. Hist. Ois. Mou., 1875, t. ii., p. 34.

*Habitat.*—Guiana ?

*Male.*—Crown of the head, back of the neck, and lower

part of the back very deep dull green; throat and chest glittering greenish-blue, imperceptibly passing into the dull brownish-black of the abdomen; undertail-coverts brown with a wash of dull blue in the centre of each feather; a mark of blue on each side at the insertion of the wing, forming an indistinct band across the back; uppertail-coverts bronzy-green; tail steel-black, rather short for the size of the bird and slightly forked; wings deep purplish-brown; tarsi clothed with intermingled grayish-white and brown feathers; upper mandible black; basal half of the under mandible fleshy, the apical half black.

Total length,  $3\frac{3}{4}$  in. Bill,  $\frac{7}{8}$ . Wing,  $2\frac{1}{16}$ . Tail,  $1\frac{3}{8}$ . "Gould, loc. cit."

Type, Ex. Gould's Collection, still unique in the British Museum.

GENUS LXXXI. **Saucerottia**, Bon., Compt. Rend., 1850, p. 381.

*Erythronota*, Gould, Int. Troch., 1861, p. 169.

*Eratopis*, Heine., Journ. fur Ornith., 1863, p. 191.

*Erasuria*, Hein., Journ. fur Ornith., 1863, p. 191.

*Lisoria*, Muls., Cat. Ois. Mou., 1875, p. 11.

TYPE: *O. erythronota*, Lesson.

Bill longer than the head, straight, broad at base, graduating to an acute point. Wings narrow and long, reaching the end of tail. Tail slightly forked. Rectrices narrow, middle ones shorter than the next one, which is also shorter than the third one, the two outermost ones of same length and longest of all, always steel-blue or greenish-black. Nostrils exposed. Feet small. Tarsi clothed. Sexes nearly similar.

*Habitat*.—Central America, Guiana, Venezuela, Columbia, Trinidad, and West Indies Islands.

267. SAUCEROTTIA ERYTHRONOTA, Less., Ois. Mou., 1829, p. 181.

*Ornismya erythronotus*, Less., Rev. Zool., 1839, p. 19.

*Polytmus erythronotus*, Gray, Gen. Birds, vol. i., p. 108.

*Chlorestes erythronotus*, Reich., Troch. Enum., 1855, p. 4.

*Hemithylaca erythronota*, Cab. and Hein., Mus. Hein., 1860, t. iii. p. 37.



*Erythronota antiqua*, Gould, Mon. Troch., vol. v., p. 316.

*Ariana erythronota*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 323.

*Erythronote*, Gould, Mon. Troch., vol. v., p. 316.

*l'Ariane erythronote*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 323.

*Habitat*.—Trinidad.

*Male*.—Forehead metallic green. Neck and upper part of back shining golden-green. Lower part of back and rump coppery-red. Uppertail-coverts purplish-bronze. Tail steel-blue. Underside brilliant metallic grass-green. Thighs and patch on the flanks white. Undertail-coverts sometimes rufous or purplish-gray edged with rufous. Wings purple. Maxilla black. Mandible flesh colour with black tip.

Total length,  $3\frac{7}{8}$  in. Wing, 2. Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{6}{8}$ .

*Female*.—Upperside like the male, excepting the uppertail-coverts which are rufous-bronze. All the rectrices of tail tipped with reddish-bronze. Underside like that of male but less brilliant.

Very common species in Trinidad.

268. SAUCEROTTIA FELICIAE, Less., Rev. Zool., 1840, p. 72.

*Ornismya felicianae*, Less., Rev. Zool., 1844, p. 433.

*Chlorestes feliciae*, Reich., Troch. Enum., 1855, p. 4.

*Hemithylaca feliciae*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 38.

*Erythronota feliciae*, Gould, Mon. Troch., vol. v., p. 317.

*Felicia's Erythronote*, Gould, Mon. Troch., vol. v., p. 317.

*l'Ariane de Félicie*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 320.

*Habitat*.—Venezuela.

*Male*.—The only difference which I can see between this species and *S. erythronota* is the colour of the top of the head which is metallic golden-green. I have one fine male specimen which has the whole of the underside metallic golden-green, but this variety of colour exists also in *S. erythronota*.

*Female*.—Less brilliantly coloured than the male, with the central parts of abdomen and lower parts of flank grayish.

In one of my specimens the tips of outermost rectrices are bronzy-red.

My specimens were collected in Caracas, by Doctor Carlos Rojas.

269. SAUCEROTTIA WELLSI, Boucard, Hum. Bird, 1893, vol. iii., p. 8.

*Wells' Erythronote.*

*l'Erythronote de Wells.*

*Habitat.*—Grenada, "British West Indies."

*Male.*—Forehead metallic grass-green. Upperside dark shining green, passing to bronze on lower part of back, rump, and uppertail-coverts. Tail shining dark purplish-blue. Underside metallic grass-green. A tuft on flanks, anal region, and thighs white. Undertail-coverts bronze margined with gray. Wings purple-brown. Maxilla black. Mandible flesh colour with black tip.

Total length,  $3\frac{5}{8}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{6}{8}$ .

*Female.*—Exactly like the male, but slightly less brilliant. Centre of anal region grayish.

This species is closely allied to *S. erythronota*, but can be easily distinguished from that species by the colour of the upperside and tail.

It was sent to me, from Grenada, by Mr. Wells.

Types in Boucard's Museum.

270. SAUCEROTTIA HOFFMANNI, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 60.

*Hemithylaca hoffmanni*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 60.

*Hoffmann's Erythronote.*

*la Saucérotte d'Hoffmann.*

*Habitat.*—Costa Rica.

*Male.*—Upperside dark shining green, passing to bronze on rump, with a bar of purplish-red close to the uppertail-coverts. Uppertail-coverts and tail shining deep blue. Underside metallic grass-green. Undertail-coverts shining blue, fringed with gray. Wings purplish. Maxilla black. Mandible flesh colour, with black tip.

Total length,  $3\frac{7}{8}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{6}{8}$ .

*Female*.—Exactly like the male, but less brilliant. Abdomen and flanks green tinged with gray. Tips of lateral rectrices reddish-bronze. Same size as male.

I collected several specimens of both sexes of this species at San José, Costa Rica, from January to April, 1877.

It was discovered in Costa Rica, by Doctor Hoffmann.

271. SAUCEROTTIA SOPHIAE, Bour. and Muls., Ann. Soc. Agr., Lyon., 1846, t. ix., p. 318.

*Trochilus caligatus*, Gould, P.Z.S., 1848, p. 14.

*Polytmus sophiae*, Gray, Gen. Birds, vol. i. p. 109.

*Amazilius sophiae*, Bon., Consp. Gen. Av., 1850, p. 78.

*Chlorestes sophiae*, Reich., Troch. Enum., 1855, p. 4.

*Saucerottia warszewiczi*, Cab. and Heine, Mus. Hein., 1860, t. iii., p. 38.

*Hemithylaca warszewiczi*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 38.

*Hemithylaca braccata*, Heine, Journ. fur Ornith., 1863, p. 193.

*Ariana Sophiae*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 328.

*Sophia's Erythronote*, Gould, Mon. Troch., vol. v., p. 322

*l'Ariane de Sophie*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 329.

*Ariana warszewiczi*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 327.

*Warszewicz's Amazili*, Gould, Mon. Troch., Suppl., 1886, p. 89.

*l'Ariane de Warszewicz*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 327.

*Habitat*.—Columbia and Venezuela.

*Male*.—The only difference between this species and *S. hoffmanni* consists in the general colour of the upperside, which is darker green, the rump of the same colour, with only a few purplish-red feathers near the uppertail-coverts, the wing-coverts are shining green. In *S. sophiae* they are reddish bronze. Both species are of the same size. The female is less brilliant, and has no spots on the rectrices.



My specimens of this species were collected at Valencia and Baranquilla (Columbia), and I have also a large series from Merida, Venezuela. There is no difference whatever between them, and the name of *H. braccata* Heine is not valid.

This species was discovered by Delattre, in Columbia.

This is certainly the species described by Messrs. Mulsant and Bourcier, and figured by Gould, in volume 5 of his Monograph, page 322. Hence the priority of *S. hoffmanni* for the Costa Rican species.

\*272. SAUCEROTTIA SAUCEROTTEI, Delattre and Bourc., Rev. Zool., 1846, p. 311.

*Polytmus saucerottei*, Gray, Gen. Birds, vol. i., p. 108.

*Saucerottia typica*, Bon., Consp. Gen. Av., vol. i., p. 77.

*Chlorestes typica*, Reich., Troch. Enum., p. 4.

*Erythronota saucerottei*, Gould, Mon. Troch., vol. v., p. 321.

*Hemithylaca saucerottei*, Cab. and Hein., Mus. Hein., t. iii., p. 38.

*Ariana saucerottei*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 321.

*Saucerotte's Erythronote*, Gould, Mon. Troch., vol. v. p. 321.

*l'Ariane de Saucerotte*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 331.

*Habitat*.—Columbia.

*Male*.—Top of head and upper surface dark grass-green; under surface luminous green, much lighter than the upper-parts. Vent white. Undertail-coverts dark bronzy-brown edged with grayish-white. Wings purple. Uppertail-coverts and tail steel-black. Maxilla black. Mandible flesh colour, tip black.

Total length,  $3\frac{1}{2}$  in. Wing,  $1\frac{7}{8}$ . Tail,  $1\frac{3}{8}$ . Culmen,  $\frac{5}{8}$ .

*Female*.—Like the male, but not so bright.

This species was discovered in Columbia, by Delattre.

273. SAUCEROTTIA CYANIFRONS, Bourc., Rev. Zool., 1843, p. 100.

*Polytmus cyanifrons*, Gray, Gen. Birds, 1844-49, vol. i., p. 108.

*Thalurania cyanifrons*, Bon., Consp. Gen. Av., 1850, p. 77.

*Chlorestes cyanifrons*, Reich., Troch. Enum., 1855, p. 4.

*Hemithylaca cyanifrons*, Heine, Journ. fur Ornith., 1863, p. 191.

*Ariana cyanifrons*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 332.

*Blue-capped Saucerottia*, Gould, Mon. Troch., vol. v., p. 223.  
*la Saucérotte à tête bleue.*

*Habitat*.—Columbia.

*Male*.—Head deep shining blue. Upperside bronzy-green, passing to dull bronze on rump. Uppertail-coverts bluish-bronze. Tail bluish-black. Underside brilliant metallic grass-green, golden on centre of abdomen in some specimens. Sides of flanks and thighs white. Undertail-coverts, purplish-bronze margined with white. Wings purple. Maxilla black. Mandible flesh colour, with black tip.

Total length,  $3\frac{5}{8}$  in. Wing,  $2\frac{2}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{6}{8}$ .

*Female*.—Upperside like that of male, but less brilliant. Underside metallic grass-green with the centre of abdomen and sides of flanks gray. Undertail-coverts pale olive margined with gray.

Total length,  $3\frac{1}{2}$  in. Wing, 2. Tail,  $1\frac{3}{8}$ . Culmen,  $\frac{6}{8}$ .

This species is very common in Columbia, where it was discovered by M. Rieffer.

I have one male specimen with white feathers on head, neck and throat, as if passing to albinism.

274. SAUCEROTTIA NUNEZI, Boucard, Hum. Bird, 1892, p. 81.

*Nuñez's Saucerottia.*

*la Saucerotte de Nuñez.*

*Habitat*.—Columbia.

*Male*.—Upperside black with purplish reflections. Uppertail-coverts purplish, each feather margined with grayish-green. Tail dark steel-blue. Wings bluish-purple. Throat shining dark purple, each feather with a white band above the purple, giving a scaly appearance to that part. Abdomen and flanks purplish, margined with gray. A patch on each side of flanks, vent, and tarsal tuft pure white. Undertail-coverts dark

brownish-green with white margin. Maxilla black. Mandible flesh colour with black tip.

Total length,  $3\frac{2}{8}$  in. Wing, 2. Tail,  $1\frac{3}{8}$ . Culmen,  $\frac{6}{8}$ .

*Female*.—Unknown.

Type of species in my collection.

GENUS LXXXII. **Amazilia**, Reichenback, Av. Syst. Nat., 1849, pl. 39.

AMAZILIS, Lesson, Ind. Gen. et Syn. Genr. Troch., 1822, p. 27.

AMAZILIA, Reich., Avium. Syst. Nat., 1849, p. 39.

AMAZILIUS, Bon., Consp. Gen. Av., 1850, vol. i., p. 77.

PYRRHOPHAENA, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 35.

HEMYTHILACA, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 37.

HEMISTILBON, Gould, Int. Troch., 1860, p. 149.

ERANNA, Heine, Journ. fur Ornith., 1863, p. 187.

ERATINA, Hein., Journ. fur Ornith., 1863, p. p. 190-191.

ARIANA, Muls. and Verr., Class. Troch., 1865, p. 36.

MYLETES, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 284.

*Type*.—*O. amazili*. Lesson.

Bill longer than the head, slightly curved, broad at base, graduating to an acute point. Feathers of forehead not projecting on the culmen. Nostrils exposed. Wings long and pointed. Tail slightly forked, outermost rectrice of the same length as the middle one, the other three nearly even, and longer. Tarsi clothed. Sexes nearly alike.

*Habitat*.—Mexico, Central America, Tres Marias Islands, Columbia, Ecuador, and Peru.

275. AMAZILIA AMAZILI, Less., Voy. Coq., 1826, pl. 31.

*Ornismya amazili*, Less., Ois. Mou., 1829, p. 27.

*Trochilus* (Lampornis) *amazilia*, Tschud. Consp. Av., p. 37.

*Polytmus amazili*, Gray, Gen. Birds, vol. i., p. 108.

*Amazilia latirostris*, Bon., Consp. Gen. Av., 1850, vol. i., p. 77.

*Amazilia pristina*, Gould, Mon. Troch., vol. v., p. 303.



*Pyrrhophæna amazilia*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 35.

*Amazilia lessoni*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 293.

*Amazili*, Gould, Mon. Troch., vol. v., p. 303.

*l'Amazili de Lesson*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 293.

*Habitat*.—Peru.

*Male*.—Upperside bronzy-green. Tail pale chestnut, glossed on the edges and tips of central feathers with greenish-bronze. Throat and sides of breast metallic emerald-green. Breast white. Abdomen and flanks rufous. Wings purplish-brown. Bill flesh colour with black tips.

Total length, 4in. Wing,  $2\frac{3}{8}$ . Tail,  $1\frac{5}{8}$ . Culmen,  $\frac{6}{8}$ .

It is a rare species. It was discovered by Lesson in the neighbourhood of Lima. My specimens of this species were also collected near Lima.

276. AMAZILIA FORRERI, Boucard, Hum. Bird, 1893, vol. iii., p. 7.

*Forrer's Amazili*.

*l'Amazili de Forrer*.

*Habitat*.—Mazatlan.

*Male*.—Upperside shining golden-green, brownish on head. Rump and uppertail-coverts chestnut. Median rectrices purplish-chestnut, passing to reddish bronze at tips, lateral purplish-chestnut with dark reddish-black edges near the tips, outermost one chestnut. Throat and sides of neck golden-green. Breast, abdomen, and vent white. Flanks pale rufous. Undertail-coverts pale chestnut margined with white. Wings brown, passing to purple on shoulders. Maxilla black. Mandible flesh colour with black tip.

Total length, 4in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{6}{8}$ .

I have only one specimen of this new species, which I bought in San Francisco (California). It was sold to me with some other birds, as having been collected in Mazatlan, by Mr. Forrer.

Type in Boucard's Museum.

277. *AMAZILIA LEUCOPHAEA*, Reich., Aufz. der Col., 1853,  
p.p. 10-24.

*Pyrrhophæna leucophaea*, Cab. and Hein., Mus. Hein.,  
1860, t. iii., p. 35.

*White-breasted Amazili*, Gould, Mon. Troch., vol. v., p. 306.

*l'Amazili à poitrine blanche*, Muls., Hist. Nat. Ois. Mou.,  
1874, t. i., p. 291.

*Habitat*.—Peru.

*Male*.—Upperside golden-green. Rump and undertail-coverts rufous. Tail rufous, median feathers edged and tipped bronze. Throat and sides of neck golden-green. Breast white. Rest of underside rufous. Wings pale brown. Bill flesh colour with black tips.

Total length,  $3\frac{1}{2}$  in. Wing,  $2\frac{1}{4}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{5}{8}$ .

It is a rare species.

- \*278. *AMAZILIA ALTICOLA*, Gould, P.Z.S., 1860, p. 309.

*Mountain's Amazili*, Gould, Mon. Troch., vol. v., p. 304.

*l'Amazili alticole*, Muls., Hist. Nat. Ois. Mou., 1874, t. i.,  
p. 289.

*Habitat*.—Ecuador.

*Adult*.—Upperparts bronzy-green, darkest on the head. Upperparts of throat and sides of neck metallic golden-green. Rest of underparts white, except flanks which are buff. The white undertail-coverts are washed with buff. Uppertail-coverts and tail chestnut, median rectrices tipped with bronzy-green. Wings purplish-brown. Bill flesh colour, with black tip. Feet black.

Total length,  $3\frac{3}{4}$  in. Wing,  $2\frac{1}{4}$ . Tail,  $1\frac{5}{8}$ . Culmen,  $\frac{3}{4}$ .

"Gould, loc. cit."

According to Elliot, specimens vary in their colouration, and some are almost entirely white beneath, with just a few feathers of the throat tipped with golden-green.

This rare species was discovered in Ecuador, by Bourcier.

279. *AMAZILIA DUMERILI*, Less., Ois. Mou., Suppl., 1831,  
p. 172.

*Polytmus dumerili*, Gray, Gen. Birds, vol. i., p. 109.

*Pyrrhophæna dumerili*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 36.

*Dumeril's Amazili*, Gould, Mon. Troch., vol. v., p. 305.

*l'Amazili de Duméril*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 288.

*Habitat*.—Ecuador.

*Male*.—This species is closely allied to the preceding one, but it has the uppertail-coverts and tail bronzy-green. The breast is pure white, encircled by metallic green feathers. Abdomen and flanks rufous. Undertail-coverts white, washed with pale rufous. Bill flesh colour with black tips.

Total length,  $3\frac{5}{8}$  in. Wing,  $2\frac{1}{4}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{6}{8}$ .

*Female*.—Differs by having the green feathers of throat and sides of breast much less bright than the male, the middle of the abdomen white, and pale rufous tips on lateral rectrices.

It is a rare species. It was dedicated by Lesson to Dumeril, Member of the French Institute, and a well-known Scientist.

280. *AMAZILIA GRAYSONI*, Lawr., Ann. N.Y., Lyc., Nat. Hist., 1867, p. 404.

*Grayson's Amazili*, Gould, Mon. Troch., Suppl., 1886, p. 87.

*l'Amazili de Grayson*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 286.

*Habitat*.—Tres Marias Islands, Mexico.

*Male*.—Upperside dark shining golden-green, brownish on forehead. Uppertail-coverts and tail cinnamon, all the rectrices tipped with dark bronze, appearing nearly black in certain lights; the outermost ones are also edged with bronze on their external webs, excepting the base. Wings purplish. Underside cinnamon. Bill flesh colour with black tips.

Total length,  $4\frac{6}{8}$  in. Wing,  $2\frac{7}{8}$ . Tail,  $2\frac{1}{8}$ . Culmen,  $1\frac{1}{16}$ .

*Female*.—Slightly smaller and paler, otherwise like the male.

This rare species was discovered by Mr. Grayson, and dedicated to him by Mr. Lawrence.

My specimen, from which the above description is taken, was collected by Mr. Forrer, in Tres Marias Islands.



281. *AMAZILIA CINNAMOMEA*, Less. Rev. Zool., 1842, p. 175.  
*Ornysmia rutila*, Delatt., Echo du monde savant, 1843, p. 1069.

*Trochilus corallirostris*, Bourc. and Muls., Ann. Soc. Agr. Lyon, 1846, t. ix., p. 328.

*Amazilius erythrorhynchus*, Bon. Compt. Rend., 1850, p. 382.

*Amazilius corallirostris*, Bon. Consp. Gen. Av., 1850, vol. i., p. 77.

*Pyrrhophæna corallirostris*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 35.

*Eranna cinnamomea*, Heine, Journ. fur Ornith., 1863, p. 187.

*Coral-billed Amazili*, Gould, Mon. Troch., vol. v., p. 307.

*l'Amazili à poitrine rousse*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 285.

*Habitat*.—Mexico, Guatemala, and Costa Rica.

*Male*.—The only difference between this species and *A. graysoni* is in its much smaller size, the tips of rectrices which are metallic bronze or metallic bronze-green, and the forehead of the same colour as the rest of the upperside.

The female is slightly paler than the male.

Total length,  $3\frac{6}{8}$  in. Wing,  $2\frac{2}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{6}{8}$ .

I think that the discoverer of this species is Delattre, who communicated it to Lesson.

I have some specimens of this species collected by Sumichrast, at Tehuantepec, Mexico, and others which I collected at Punta-Arenas, Costa Rica.

282. *AMAZILIA YUCATANENSIS*, Cabot., Proceed. Nat. Hist., Boston, 1845, p. 74.

*Pyrrhophæna yucatanensis*, Gould, Int. Troch., 1861, p. 157.

*Errana yucatanensis*, Heine, Journ. fur Ornith., 1863, p. 187.

*Yucatan Amazili*, Gould, Mon. Troch., vol. v. p. 308.

*l'Amazili du Yucatan*, Muls., His. Nat. Ois. Mou., 1874, t. i., p. 295.

*Habitat*.—Yucatan, Mexico.

*Male*.—Upperside golden-green. Tail chestnut with bronze tips, which are scarcely visible on the two outermost feathers. Throat and breast metallic green, with golden reflections. Abdomen and under-tail coverts cinnamon. Wings purplish-brown. Bill flesh colour with black tips.

Total length, 4in. Wing,  $2\frac{2}{8}$ . Tail,  $1\frac{6}{8}$ . Culmen,  $\frac{1\frac{3}{8}}{1\frac{6}{8}}$ .

It is a rare species. My specimens were collected by Gaumer, in Yucatan.

I have also one specimen sent by the same collector, at the same time, which I consider as the female of that species. It is exactly coloured as the male, but all the underside is cinnamon as *A. cinnamomea*; the tail is exactly like that of the male with greenish bronze spots at tips of outermost rectrices; the external webs of these rectrices are also bronzy-green.

283. *AMAZILIA CERVINIVENTRIS*, Gould, P.Z.S., 1856, p. 150.

*Pyrrhophæna cerviniventris*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 36.

*Errana cerviniventris*, Heine, Journ. fur Ornith., 1863, p. 187.

*Fawn-breasted Amazili*, Gould, Mon. Troch., vol. v., p. 309.

*l'Amazili à ventre de biche*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 297.

*Habitat*.—Mexico.

*Male*.—Upperside golden-green. Median rectrices dark rufous margined, and tipped bronze, lateral rufous with external webs and tips bronze. Underside metallic green, golden on breast and sides of neck. Abdomen pale rufous. Flanks pale rufous, washed with golden feathers. Undertail-coverts pale rufous. Wings purplish brown. Bill flesh colour with black tips.

Total length,  $3\frac{6}{8}$ in. Wing,  $2\frac{2}{8}$ . Tail,  $1\frac{6}{8}$ . Culmen,  $\frac{1\frac{3}{8}}{1\frac{6}{8}}$ .

This species was discovered by Mr. Sallé and myself, at Tospam, near Cordoba, Mexico. It is closely allied to *A. yucatanensis*, but easily distinguished from that species by the colour of the abdomen, undertail-coverts, and flanks, and the tail. In *A. yucatanensis*, the lateral rectrices are much narrower, with small bronzy-black tips, instead of large bronze tips.

\*284. *AMAZILIA CASTANEIVENTRIS*, Gould, P.Z.S., 1856, p. 150.

*Chestnut-bellied Amazili*, Gould, Mon. Troch., vol. v., p. 310.

*l'Amazili à ventre marron.*

*Habitat.*—Columbia.

Crown of the head, upper part of the back and shoulders reddish-bronze; rump and uppertail-coverts grayish, with a bronzy lustre; wings purplish-brown with the exception of the basal portion of the primaries and secondaries, which are rufous; tail dark chestnut tipped with a bronzy lustre, of great extent and most conspicuous on the centre feathers; throat, forepart of the neck, breast, and upperpart of the abdomen shining golden-green; undersurface of the shoulders, lower part of the abdomen and undertail-coverts fine chestnut-red; thighs white; upper mandible brownish-black, under mandible flesh colour, except the tip, which is brownish-black.

Total length,  $3\frac{1}{2}$  in. Bill,  $\frac{7}{8}$ . Wing,  $2\frac{1}{16}$ . Tail,  $1\frac{1}{4}$ .

"Gould, loc. cit."

This species differs from *A. cerviniventris*, in the much greater depth of the chestnut colouring of the abdomen, undertail-coverts and tail, in size it is considerably less than in that species, being even smaller than *A. beryllina*, to which it offers an alliance in the colouring of the wings; but from which it differs in the colouring of its abdomen; the white feathers of the thighs are much developed and very conspicuous.

285. *AMAZILIA FUSCICAUDATA*, Fras., P.Z.S., 1840, p. 17.

*Trochilus riefferi*, Bourc., Rev. Zool., 1843, p. 103.

*Trochilus aglaiae*, Bourc. and Muls., Ann. Soc. Phys. and Sc. Lyon, 1846, p. 329.

*Hylocharis fuscicaudatus*, Gray, Gen. Birds, vol. i. p. 114.

*Amazilius, aglaiae*, Bon. Consp. Gen. Av., 1850, vol. i., p. 71.

*Trochilus dubusi*, Bourc., Soc. Agr. Lyon, 1852, p. 141.

*Polytmus aglaiae*, Gray, Gen. Birds, 1844-49, vol. i., p. 109.

*Saucerottia aglaiae*, Reich., Aufz. der Colib., 1853, p. 10.

*Chlorestes aglaiae*, Reich., Troch. Enum., 1855, p. 4.

*Pyrrhophæna riefferi*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 36.

*Pyrrhophæna suavis*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 36.



*Hemithylaca aglaiae*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 36.

*Errana jacunda*, Heine, Journ. fur Ornith., 1863, p. 188.

*Rieffer's Amazili*, Gould, Mon. Troch., vol. v., p. 311.

*l'Arianne de Rieffer*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 317.

*Habitat*.—Mexico, Central, America, Columbia, and Ecuador.

*Male*.—Upperside shining bronze-green, with golden reflections. Uppertail-coverts reddish-chestnut. Tail chestnut, all the rectrices more or less margined and tipped bronze. In some specimens, especially from Costa Rica, and Guatemala, the margins and tips of rectrices are purplish-black bronze. Throat and breast brilliant metallic grass-green, golden in some specimens. Abdomen and flanks pale brown, washed with green feathers. Undertail-coverts rufous. Wings purplish. Bill flesh colour with black tips. Thighs, and a tuft on each side of vent white.

Total length, 4in. Wing,  $2\frac{3}{8}$ . Tail,  $1\frac{1}{2}$ . Culmen,  $\frac{6}{8}$ .

*Female*.—Less brightly coloured than the male.

This is one of the most common species, and with the widest range. I have collected many specimens in Guatemala, Costa Rica, and Panama, and I cannot see the least difference between these and the specimens which I have from Columbia and Ecuador. Therefore, I think as Mr. Elliot, that all of them belong to the same species.

\*286. *AMAZILIA LAWRENCEI*, Elliot, Auk., 1889, pp. 209-210.

*Amazilia aeneobrunnea*, Chap., Journ. fur Ornith., 1889, p. 329.

*Lawrence's Amazili*.

*l'Amazili de Lawrence*.

*Habitat*.—Columbia?

Crown of head, neck, back, upperwing-coverts, and uppertail coverts dull bronzy-green. Wings purple, base of primaries and secondaries blackish. Throat, sides of neck, and breast glittering grass-green; lower part of flanks and abdomen very dark chestnut-brown; undertail-coverts cinnamon. Tail bright chestnut, tips and edges of both webs bluish-black, most extensive on lateral feathers, reaching on outer webs nearly

to their base. Maxilla black, mandible black with a slight indication of flesh-colour at the base. Feet black.

Length of wing,  $2\frac{1}{2}$  in. Tail,  $\frac{1}{2}$ . Culmen,  $\frac{9}{12}$ . "Elliot loc cit."

This species is easily distinguished from all the others by its black bill, differently coloured abdomen, and undertail-coverts.

It was dedicated by Mr. Elliot to the well-known American Ornithologist, Mr. George N. Lawrence.

The type is in the American Museum of Natural History of New York.

287. *AMAZILIA VIRIDIGASTER*, Bourc., Rev. Zool., 1843, p. 105.

*Hylocharis viridigaster*, Bon., Consp. Gen. Av., 1850, vol. i., p. 74.

*Saucerottia viridiventris*, Reich., Aufz. der Col., 1853, p. 8.

*Hemithylaca viridiventris*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 38.

*Pyrrhophæna viridigaster*, Gould, Int. Troch., 1861, p. 159.

*Ariana viridigaster*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 320.

*Green bellied Amazili*, Gould, Mon. Troch., vol. v., p. 314.

*l'Ariane à ventre vert*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 321.

*Habitat*.—Columbia.

*Male*.—Forehead metallic green. Neck and back shining green. Lower part of back and rump, grayish bronzy-brown, passing into purple on the uppertail-coverts. Tail shining violet with blue reflections. Underside metallic grass-green, passing into smoky-brown on lower part of abdomen. Thigh and tuft on anal region white. Undertail-coverts pale greenish-bronze, margined with light buff on some specimens, on others margined with white. Wings purplish. Maxilla black. Mandible flesh colour with black tip.

Total length,  $3\frac{1}{2}$  in. Wing,  $2\frac{2}{8}$ . Tail,  $1\frac{3}{8}$ . Culmen,  $\frac{6}{8}$ .

*Female*.—Upperside like the male, but less bright. Flanks and abdomen smoky-brown, washed with green. Rufous tips on lateral rectrices.

Bourcier's type is in my collection.

This species was discovered in Columbia, by Mr. Rieffer.

\*288. *AMAZILIA IODURA*, Saucerotte, M.S.

*Saucerottia iodura*, Reich., Aufz. der Colib., 1853, p. 8.

*Chlorestes iodurus*, Reich., Troch. Enum., 1855, p. 4.

*Hemithylaca iodura*, Cab. and Hein., Mus. Hein., 1860, t. iii., p. 39.

*Pyrrhophæna iodura*, Gould, Int. Troch., 1861, p. 59.

*Eratina iodura*, Heine, Journ. für Ornith., 1863, p. 190.

*White-vented Amazili*, Gould, Mon. Troch., Suppl., 1886, p. 88.

*l'Amazili à ventre blanc.*

*Habitat.*—Columbia.

“Capite, collo, pectore, dorso superiore, tectricibusque alarum splendide virescentibus, gula paululum albo intermixta; alis coeruleo-virescentibus latissime pallide fulvescente-limbatis; cauda splendide purpureo-violaceo; abdomine fulvescente; crisso albido.”

Length, 3" 3". Wing, 2". Tail, 1" 2". Culmen, 9".  
“Cab. and Hein., loc. cit.”

From some specimens compared with the type, and kindly sent to me by Count Berlepsch, I am of opinion that this species is not valid, and is the same as the preceding one, *A. viridigaster*.

\*289. *AMAZILIA LUCIDA*, Elliot, Ann. and Mag. Nat. Hist., 1877, p. 404.

*Elliot's Amazili*, Gould, Mon. Troch., Suppl., 1886, p. 89.

*Le Pyrrhophène brillant*, Muls., Hist. Nat. Ois. Mou., 1878, t. iv., p. 183.

*Habitat.*—Columbia.

*Adult.*—Crown of the head dark metallic green; upper-surface shining grass-green, lighter than the head. Upper-tail-coverts golden-bronze. Throat, breast, abdomen, and flanks metallic grass-green, a light mouse coloured spot on the lower part of the abdomen. Thighs white, feathers fluffy. Undertail-coverts dark bronzy-brown, edged with white. Wings dark purple. Tail reddish-bronze, darkest in the centre of the feathers along the shafts, with the tips of the lateral rectrices bluish-black, their edges reddish-bronze. This bluish-black colour, almost resolves itself into a subterminal bar,



and is especially conspicuous on the underside of the tail. Bill brownish red, flesh colour in life, tip blackish.

Total length,  $3\frac{1}{2}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{1}{4}$ . Culmen;  $\frac{3}{4}$ . "Elliot's Synopsis Hum. Birds, p. 223."

Type in Elliot's Museum, now in the Museum of Natural History, New York.

290. *AMAZILIA EDWARDI*, Delatt. and Bourc., Rev. Zool., 1846, p. 308.

*Polytmus edwardsi*, Gray, Gen. Birds, 1844-49, vol. i, p. 109.

*Saucerottia edwardsi*, Reich., Aufz. der Col., 1853, p. 8.

*Thaumantias edward*, Bon., Rev. and Mag. Zool., 1854, p. 255.

*Erythronota edwardi*, Lawr., Ann. Lyc. N. York, t. vii., p. 292.

*Wilson's Erythronota*, Gould, Mon. Troch., vol. v., p. 318.

*Le Leucodore d'Edouard*, Muls., Hist. Nat. Ois. Mou., 1874, t. i., p. 312.

*Habitat*.—Panama, Veragua.

*Male*.—Top of head shining green, bronzy on neck. Back bronzy-green passing to shining reddish-bronze on rump and uppertail coverts. Tail bronzy-purple. Throat, breast, and flanks metallic grass-green passing to golden on flanks. Abdomen pure white. A tuft of white feathers on sides of flanks. Thighs white. Undertail-coverts pale rufous bordered with grayish-white. Wings purple. Maxilla black. Mandible flesh colour with black tip.

Total length,  $3\frac{6}{8}$  in. Wing,  $2\frac{1}{8}$ . Tail,  $1\frac{3}{8}$ . Culmen,  $\frac{6}{8}$ .

This fine species was discovered in Panama, by Delattre. He and Bourcier described and dedicated it to Mr. Edward Wilson, of Lydstip, near Tenby. Mr. Wilson made a very fine Ornithological collection during his life, and was a liberal patron of science.

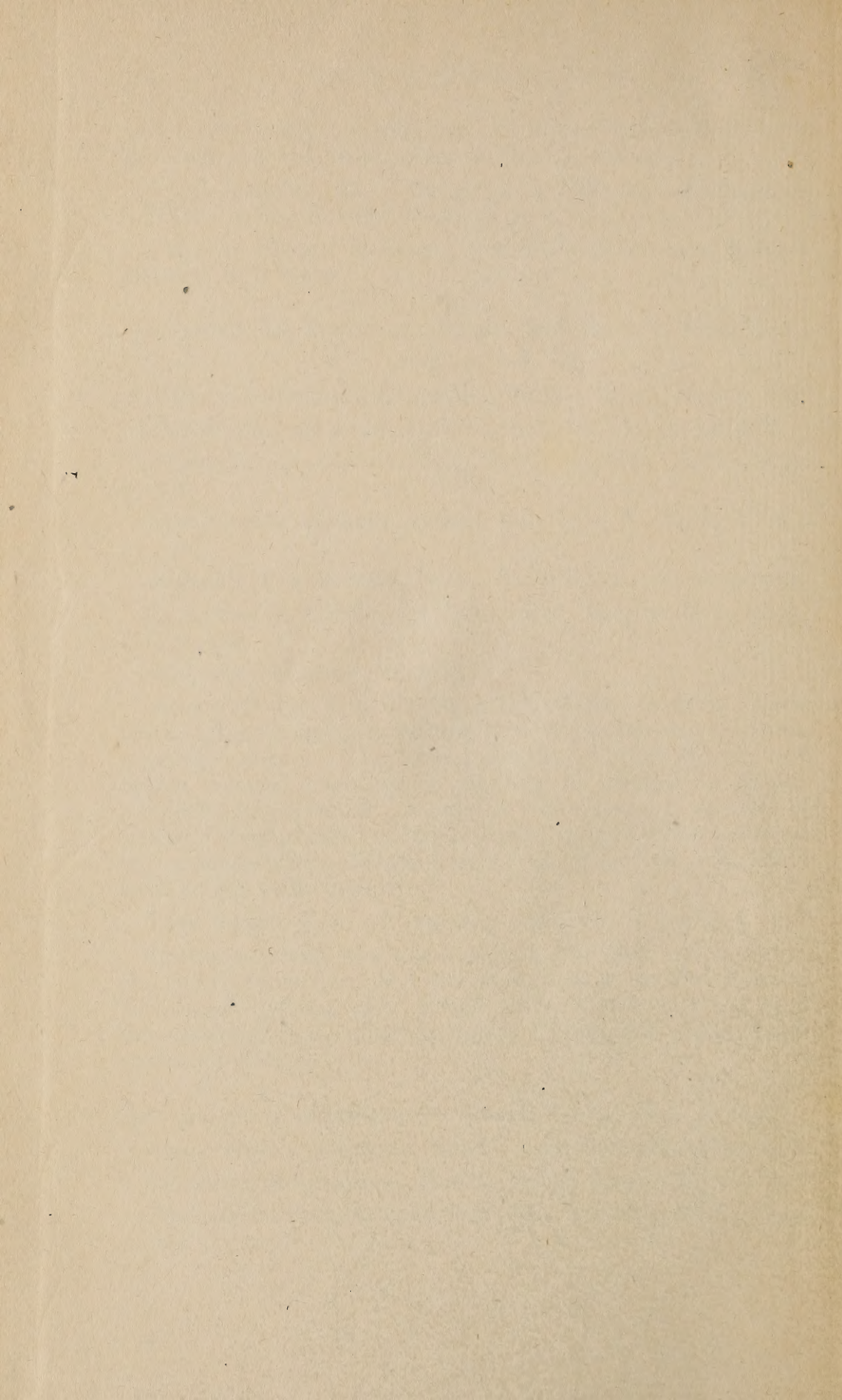
291. *AMAZILIA NIVEIVENTRIS*, Gould, P.Z.S., 1850, p. 164.

*Saucerottia niveiventer*, Reich., Aufz. der Colib., 1853, p. 8.

*Chlorestes niveiventris*, Reich., Troch. Enum., 1855, p. 4.

*Thaumantias niveiventer*, Bon., Rev. and Mag. Zool., 1854, p. 255.









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